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RESUSCITATION OF THE NEWBORN

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Hypoxia occurs in every newborn infant during or immediately after birth. In the great majority of cases the infant is relieved of this hypoxia by the prompt beginning of adequate respiration. Should the infant fail in his initial respiratory efforts, the ensuing oxygen want may result in depression of the respiratory center, followed by congestion, edema and hemorrhage into various tissues. The respiratory depression aggravates the oxygen lack, setting up a vicious cycle that leads to death if not checked. This syndrome is called asphyxia, and efforts to correct it may be called resuscitation.

Not much work of importance was done to assist hypoxic infants until the nineteenth century. It was then shown that oxygen is essential to respiration. In 1841 John Snow [1] showed that 5 per cent of newborn infants in his series were stillborn, a large proportion dying of asphyxia. He developed the use of an "exhausting syringe" to remove mucus from the fauces. He used mouth to mouth insufflation of the lung and recognized the value of oxygen. From his studies, he concluded that the cause of the first and every succeeding inspiration during life is the same, namely, oxygen lack. He also felt that the newborn infant had a greater ability to withstand oxygen want than the adult.

During the last 50 years there has been a great demand by pregnant women for painless childbirth. Unfortunately, the use of sedatives and anesthetics during labor may depress the newborn infant so that he fails to initiate respiration (Russ and Strong [2]).

Asphyxia of the newborn has come into prominence again in recent years. Clifford,[3] Cole,[4] Wilson and Farber,[5] Little and Tovell [6] and others have emphasized this problem.

PHYSIOLOGY OF HYPOXIA

Hypoxia in the newborn is usually of the anoxic type —that is, insufficient oxygen enters the blood. This is due either to obstruction of the air passages by aspirated mucus (or other obstructing material) or to depression of the respiratory center and a subsequent lack of respiratory effort on the part of the infant. A stagnant type of hypoxia occurs when the circulation fails. The anemic type of hypoxia occurs in severe erythroblastosis fetalis.

The central nervous system is highly vulnerable to oxygen lack. Severe hypoxia for eight minutes may result in permanent damage to the cerebral cortex and small pyramidal cells. As the medullary cells require 20 to 30 minutes of severe hypoxia for death to occur, it is likely that epilepsy or mental deficiency may occur in infants surviving severe birth asphyxia. Tyson,[7] Schreiber,[8] Preston [9] and Windle [10] have offered convincing evidence that this is so.

Secondary to anoxia is the acidosis due to accumulation of carbon dioxide and lactic acid, which may lower the p_H of the blood to 7.2, a level incompatible with life (Smith [11]).

In the past there was much discussion of the role of carbon dioxide in stimulating respiration in the apneic newborn. It has been shown that the newborn infant has an excess of carbon dioxide and that administration of this gas succeeds only in further lowering the p_H of the blood.

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Dr. H. B. Van Wyck, professor of obstetrics and gynecology; Dr. C. H. Best, professor of physiology, and Dr. W. Donahue, pathologist at the Hospital for Sick Children, aided in this work; Dr. Alan Brown, professor of pediatrics, helped with the pediatric aspects of the research; Dr. Edward Fidlar, of the department of physiology, assisted with the laboratory tests; Dr. Donald Van Wyck, Dr. Harry Fry, Dr. W. Allemang and Dr. James McHendry helped in the clinical aspects. Miss Margaret Drummond made the drawings, and Mr. John Barnes was the photographer. The Oxygen Equipment Manufacturing Company, East Norwalk, Conn.; the J. F. Hartz Company of Toronto, Canada; the Dominion Oxygen Company, Ltd. and Mr. Fraser Sweatman, of Fisher, Burpe & Company, Winnipeg, Manitoba, Canada, gave technical assistance in the work.

1. Snow, J.: London M. Gaz. **29**: 224, 1841.
2. Russ, J. D., and Strong, R. A.: Am. J. Obst. & Gynec. **51**: 643, 1945.
3. Clifford, S. H.: J. Pediat. **18**: 567, 1941.
4. Cole, W. C.: J. Pediat. **19**: 258, 1941.
5. Wilson, J. L., and Farber, S.: Am. J. Dis. Child. **46**: 590, 1933.
6. Little, D. M., Jr., and Tovell, R. M.: Internat. Abstr. Surg. **86**: 417, 1948.
7. Tyson, R. M.: Immediate Care of Newborn in Relation to Neonatal Mortality, J. A. M. A. **124**: 351 (Feb. 5) 1944.
8. Schreiber, F.: Apnea of Newborn and Associated Cerebral Injury: Clinical and Statistical Study, J. A. M. A. **111**: 1263 (Oct. 1) 1938.
9. Preston, M. I.: J. Pediat. **26**: 353, 1945.
10. Windle, W. F.; Scharpenberg, L. G., and Steele, A. G.: Am. J. Physiol. **121**: 692, 1938.
11. Smith, C. A.: The Physiology of the Newborn Infant, Springfield, Ill., Charles C Thomas, Publisher, 1945.

PATHOLOGY OF HYPOXIA

Atelectasis of the lung may occur from various causes. It may be due to obstruction of the air passages, a depressed respiratory center, feeble musculature of respiration (premature infants), increase of resistance to expansion of the lung or interference with

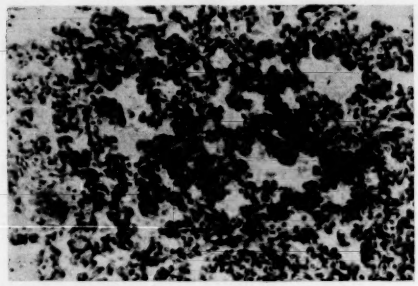

Fig. 1.—Lung of asphyxiated premature infant illustrating initial atelectasis.

oxygen uptake from the lung during failure of respiration from any cause. All of these result in incompletely expanded lungs and increasing hypoxia. Usually two or more of these causes are in operation in any given case of asphyxia. In an attempt to provide oxygen to the vital organs, there is a resultant vascular dilatation, with congestion, edema and multiple hemorrhages into all organs, as Clifford [3] has ably shown. Degeneration of the brain and liver cells may occur.

The first five photomicrographs illustrate varying degrees of atelectasis. Figure 1 shows atelectasis in a premature infant weighing 4 pounds 13 ounces (2,200 Gm.) with pathological changes in vital organs, including edema of the brain. The round regular alveolar

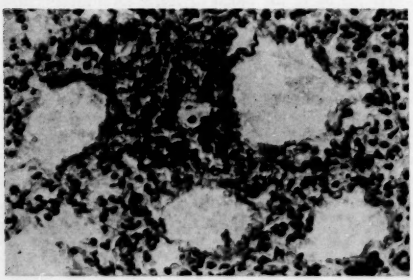

Fig. 2.—Lung of asphyxiated premature infant born by cesarian section. Note vernix caseosa lining alveolar walls.

cells illustrate the initial atelectasis. Figure 2 shows aspiration of amniotic fluid and vernix caseosa into alveoli. Figure 3 shows massive aspiration of vernix caseosa into alveoli. Figure 4 shows hemorrhage into the alveoli resulting from asphyxia. Figure 5 illustrates the fact that one cannot actively expand an atelectatic newborn lung. It is possible only to assist the infant in his efforts by providing good antepartum and natal care, a clear airway and oxygen.

These photomicrographs show that atelectasis is not a disease but a sign of failure of the respiratory process.

ETIOLOGY OF HYPOXIA

From the standpoint of prevention and active treatment, hypoxia of the fetus and newborn is best considered under two headings—acute and prolonged. Excessive sedation, long anesthesia and prolonged pressure on the fetal head do not result per se in fetal anoxia, but they cause failure of the newborn to establish adequate respiration.

The primary causes of asphyxia in the fetus are represented in table 1. Table 2 shows diagrammatically the chain of events following those in table 1. Prevention and treatment are also indicated in the diagram. Table 1 illustrates that antepartum care is of the

Fig. 3.—Lung of infant who aspirated large amounts of vernix caseosa.

utmost value. It is possible to prevent, control, or at least be prepared for, hypoxia in the newborn.

Table 2 shows how relentless hypoxia is once it is established in the fetus or newborn; in some cases the newborn is powerless to halt its progress unless the physician stops the train of events. Once it is checked, the fetus or newborn, if healthy, is usually quite capable of reversing the congestion and edema of early asphyxia without apparent permanent damage.

TREATMENT

Early in this study attempts were made to treat infants suffering from severe atelectasis at the Hospital for Sick Children, Toronto, but it soon became apparent that this must be a delivery room procedure. Consequently the major effort was directed toward prophylactic treatment in the prenatal and natal periods and active treatment of the infant immediately after birth. Therefore, this work was transferred to the delivery rooms of the Toronto General Hospital.

Prophylactic treatment can be summarized as efficient obstetric technic. This includes minimal sedation and anesthetic during labor and the provision of oxygen to the mother when fetal distress is present or anticipated.

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Routine prophylactic low forceps and often episiotomy are used to protect the premature head in passing through a firm perineum. Mucus, blood, vernix and amniotic fluid are removed from the infant's mouth and throat immediately on delivery. These procedures are routine practice on all infants.

If antepartum prophylaxis is not possible, or of no avail, treatment of the infant should be carried out at once in the delivery room. This treatment is directed toward removing any obstruction to the air passages and to supplying oxygen to the infant. It is believed that there is usually five to eight minutes to correct the hypoxia of tissues and organs if a normal infant is to result. In this study a routine clearing of the mouth and pharynx was always done immediately by a mouth-held mucus tube, with the infant held head down. If respiration failed to assume a normal pattern within two minutes, rapid removal of any obstructing material from the larynx and trachea was instituted. In the case of the flaccid infant or in the infant who was making ineffectual respiratory movements, immediate steps were taken to assure a completely clear airway and to administer oxygen.

TABLE 1.—*Primary Causes of Hypoxia in the Fetus*

Acute	Prolonged
Placenta previa	Placental ischemia
Short cord	Eclampsia
Cord about the neck	Diabetes
Abruptio placentae	Maternal vascular disease
	Severe maternal anemia
	Erythroblastosis fetalis
may result in hypoxia of short duration and cause stimulation of respiratory center, resulting in respiratory movements during birth, possibly with aspiration of amniotic fluid, mucus and blood	may result in increasing hypoxia with depression of respiratory center before birth starts

A simple apparatus has been devised to enable clearing of the airway and to deliver oxygen to the functioning alveoli. It is widely accepted today that it is not possible or safe to attempt to expand atelectatic alveoli by any gas under pressure.

APPARATUS

There are today many devices to facilitate resuscitation, including various types of automatic resuscitators and inhalators. These are subject to error inasmuch as they substitute a mechanical apparatus for the human brain. It is obviously dangerous to impose an artificial and capricious respiratory cycle on an infant's undeveloped pattern. The objective was to provide a safe and simple method of clearing the airway and of delivering oxygen at a physiological pressure.

A simple apparatus which provides simultaneously gentle controlled suction and oxygen delivery was developed on the principle of an oxygen-powered atomizer.[12] This device is readily attached to a supply of pure oxygen through a reducing valve and flowmeter (fig. 6).

In order to avoid repeated intubation of the pharynx and trachea, the principle of concentric tubes is employed. An outer semiflexible rubber-covered endotracheal catheter (McGill) is inserted only once during the resuscitation. Repeated clearing of obstructing materials is achieved by inserting a plastic suction tube into the lumen of the McGill catheter. The oxygen delivery is attached to the side arm of the McGill catheter.

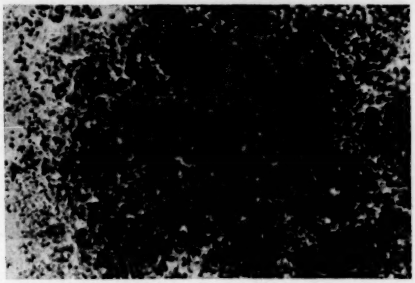


Fig. 4.—Lung of infant with severe hemorrhage as part of the picture of asphyxia.

A metal blow off valve on the oxygen delivery line prevents the oxygen pressure from exceeding 2.5 cm. of water pressure.

If a small amount of water is kept in the bottom of the suction bottle to facilitate cleaning, the tip of the suction tube must be at least 1 inch (2.5 cm.) above the level of the water. Otherwise, if the suction is lessened during the clearing of the airway, water may enter the trachea.

Method of Use.—The procedure is carried out under direct vision, with use of a newborn-size laryngoscope. An extra 3/16 inch (0.48 cm.) curvature to the tip of the blade facilitates visualization of the larynx of the newborn.

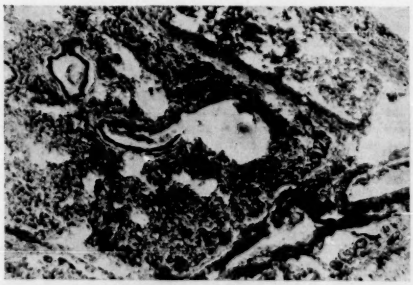


Fig. 5.—Lung of asphyxiated 9 pound (4,080 Gm.) baby of a primipara who had a prolonged difficult labor. Cyanosis and atelectasis were marked from birth to death, 15 hours later. An alternating positive and negative pressure resuscitator was used repeatedly with temporary improvement in color only. Note the rupture of a respiratory bronchiole and failure of the adjacent alveoli to expand.

The infant, loosely wrapped in a warm sterile blanket, is placed on his back on a table with his head supported over

12. This apparatus is manufactured by the Oxygen Equipment Company, East Norwalk, Conn.

the edge of the table so that his neck is hyperextended. The flowmeter is set at 7 liters per minute (giving a suction of approximately 50 cm. of water). With the plastic inner catheter inserted inside the McGill catheter, the concentric tubes are inserted into the pharynx and the suction applied to all areas above the glottis. The inner tube is removed and cleared by dipping in sterile water and then reinserted. Should very sticky material block the inner tube, it is removed at its junction with the plastic suction tubing and a spare inner tube is attached.

If the obstructing materials are unduly tenacious, the suction may be increased by increasing the oxygen flow to 8 or 9 liters per minute and clearing the plastic catheter repeatedly by sucking sterile water through it.

Often, clearing the supraglottic region is all that is required to permit the infant to establish adequate respiration, good color and good tone.

Should regular effective respiration not occur or should the infant still remain cyanotic, pale or flaccid, a clean plastic inner tube is inserted and the McGill catheter advanced through the glottis. Suction of the subglottic area is done at once. When all obstructing materials are removed, the plastic suction tube is withdrawn from the McGill catheter, which is left in place. The flowmeter is adjusted to 6 liters per minute and oxygen is administered intratracheally with the thumb or finger pressed over the open funnel of the McGill catheter. The oxygen is delivered into the trachea at a pressure of 2.5 cm. of water and at a rate of flow of approximately 800 cc. per minute. The oxygen concentration is 98 per cent if the suction tube is clamped and 72 per cent if it is not clamped.

Since the McGill catheter is inserted only once during the entire procedure, trauma is negligible.

The infant is kept warm by changing of the warm sterile blankets every three to four minutes. When the respiratory movements become vigorous, the thumb is removed from the open end of the funnel during expiration. When the color and tone become good, the McGill catheter is removed from the trachea.

The cord is then clamped and cut, treatment to the eyes given, the infant placed in an incubator with oxygen and kept under close observation in the nursery for the next six hours.

A respiratory stimulant is sometimes given intramuscularly during the resuscitation procedure, but it is merely an adjuvant to provision of a clear airway and oxygen administration.

As removal of obstructing materials and oxygen administration are urgent procedures, rarely has the standard bronchoscopy, which naturally involves great delay, been useful.

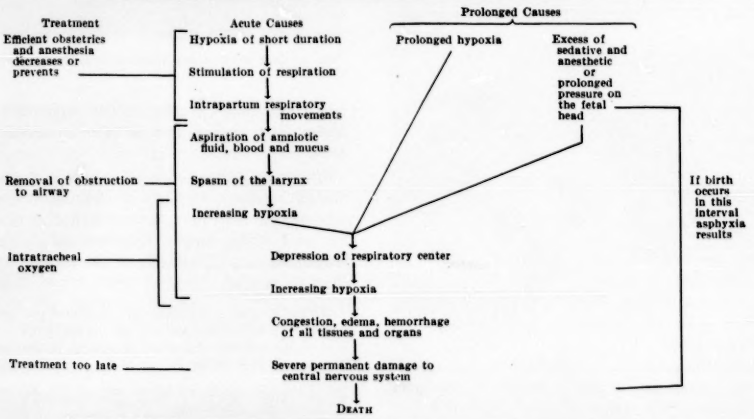
After the establishment of respiration of a premature infant it is important not to hinder the mechanics of respiration by the weight of clothing, blankets and hot water bottles. An incubator overcomes this difficulty by allowing free inspiration of warmed air with a high oxygen content. Heat and humidity are controlled to prevent excessive heat and fluid loss.

Treatment in the postresuscitation period should incorporate the following items: minimal handling, giving nothing by mouth for 24 hours, maintaining a continuous oxygen supply for a minimum of eight hours and turning the infant to the opposite side hourly.

RESULTS

Table 3 shows the results of resuscitation in relation to the primary cause of asphyxia. The primary cause was selected from an analysis of obstetric data, the subsequent clinical course of the infant and the postmortem studies when available.

TABLE 2.—*Asphyxia of the Fetus and Newborn*


Treatment
Acute Causes
Prolonged Causes
Efficient obstetrics and anesthesia decreases or prevents
Hypoxia of short duration
Prolonged hypoxia
Excess of sedative and anesthetic or prolonged pressure on the fetal head
Stimulation of respiration
Intrapartum respiratory movements
Aspiration of amniotic fluid, blood and mucus
Removal of obstruction to airway
Spasm of the larynx
Increasing hypoxia
If birth occurs in this interval asphyxia results
Intratracheal oxygen
Depression of respiratory center
Increasing hypoxia
Congestion, edema, hemorrhage of all tissues and organs
Treatment too late
Severe permanent damage to central nervous system
DEATH

The total number of deliveries in the three year period was 2,531. These were all public ward cases, in a certain proportion of which there had been no antepartum care or which were problem cases referred to the hospital.

It is seen that some maternal and fetal causes of asphyxia are difficult or impossible to prevent and that they carry a high mortality (for example, severe congenital anomalies, intracranial hemorrhage and placental separations). The most frequent causes of asphyxia are those associated with delivery. The result of treatment in these cases is very satisfactory.

Until Jan. 1, 1949 the sedative used was diacetylmorphine and scopolamine, and the anesthetic, nitrous oxide and ether, routinely. At this time the sedative was changed to meperidine (demerol*) and scopolamine, and there was an increased use of cyclopropane as an anesthetic. A definite increase was noted in

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the incidence of sleepy babies. Consequently, more resuscitations were necessary, and they were successful in a higher percentage of cases. Obviously, the wider the selection of cases chosen for resuscitation procedures, the higher the percentage of successful results.

In 1948 and 1949 all infants delivered by cesarean section were intubated routinely unless adequate respiration was established at birth, and this routine has saved babies who would have died otherwise.

Premature infants require especially gentle handling during the establishment of adequate respiration. If this is done, prematurity does not present a major complicating factor in resuscitation.

In the first half of 1949, there was a marked increase in the number of newborns resuscitated. This is believed to be due partly to the change of sedative and anesthetic mentioned previously and also to the increased interest in insuring early, adequate respiration. During the second half of 1949, trichloroethylene anesthesia

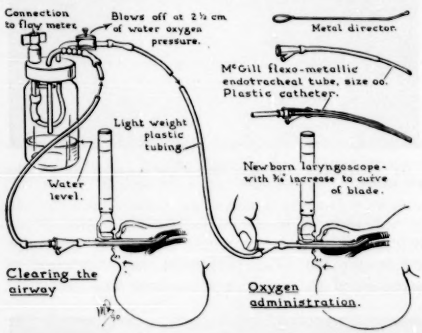
Connection to flow meter
Blows off at 2½ cm. of water oxygen pressure.
Metal director
McGill flexo-metallic endotracheal tube, size 00. Plastic catheter.
Light weight plastic tubing
Newborn laryngoscope with ¾" increase to curve of blade.
Water level.
Clearing the airway
Oxygen administration.

Fig. 6.—Fletcher aspirator resuscitator.

was investigated, with a great decrease in the necessity for resuscitation of the infant. Over a period of three years the stillbirth and neonatal death rate on a large series of deliveries (2,531) has steadily fallen, as shown in table 4. Resuscitation efforts would appear to have played a considerable part in this improvement.

The accompanying roentgenograms (figs. 7, 8 and 9) illustrate the gradual expansion of the lung and decrease in size of the heart of an infant recovering from an aspiration of amniotic fluid.

COMMENT

The following hypothesis is advanced in an attempt to explain why some hypoxic infants aspirate obstructing materials while others do not. In acute obstetric emergencies in which the oxygen supply of the fetus is suddenly cut off during labor, respiratory movements may result in aspiration of amniotic fluid containing maternal or fetal discharges. The fluid entry into the trachea will be very small, 3 or 4 cc. perhaps, if the lung has not expanded. If birth occurs immediately and respiration is initiated normally, this quantity is not important because dissemination occurs throughout the bronchi, so that only minimal areas of atelectasis remain, as Wilson [13] pointed out.

On the other hand, if strong respiratory movements occur just before the head is born, the lungs, may partly expand, a mixture of air and amniotic fluid entering

TABLE 3.—*Results of Resuscitation in Relation to Primary Cause of Asphyxia of the Newborn*

Burnside Obstetrical Department, Toronto General Hospital

Primary Cause	1947 Total	1947 Died	1948 Total	1948 Died	1949 Total	1949 Died
Maternal						
Placenta previa (vaginal delivery)	1	1	1	1	1	0
Abruptio placentae	4	2	3	2	5	1
Diabetes mellitus	0	0	1	1	1	1
Toxemia	0	0	2	0	2	1
Total	5	3	7	4	9	3
Fetal						
Severe congenital anomalies *	3	3	1	1	1	0
Prematurity only	2	2	0	0	3	1
Intracranial hemorrhage	5	4	0	0	1	1
Erythroblastosis	0	0	0	0	0	0
Prenatal infection (nonsyphilitic)	1	0	0	0	0	0
Syphilis	0	0	0	0	0	0
Total	11	9	1	1	5	2
Causes Associated with Delivery						
Excessive sedation or anesthetic	3	0	1	0	9	0
Prolonged or difficult labor	5	1	5	2	8	0
Aspiration of meconium	2	2	0	0	0	0
Cord about the neck	0	0	1	0	1	1
Prolapse of cord	0	0	1	1	2	0
Cesarean section	5	1	2	0	2	0
Total	15	4	10	3	22	1
Undiagnosed	5	3	9	2	9	0
Total	36	19	27	10	45	6

* These were severe cardiac and renal anomalies, undiagnosed during the short life of the infant.

the lung. The tidal air has now been increased to 25 cc. or more, with the result that inspiration may now result in massive aspiration of maternal or fetal discharges mixed with air. Should much meconium,

TABLE 4.—*Summary of Resuscitation Studies*

Burnside Obstetrical Department, Toronto General Hospital Public Ward Deliveries

	1947 No.	1947 %	1948 No.	1948 %	1949 No.	1949 %
Total Deliveries	895	...	785	...	851	...
Stillbirths *	27	3.0	29	3.7	23	2.6
Neonatal Deaths	34	3.8	15	2.0	17	2.0
Attempted Resuscitations	36	...	27	...	45	...
Successful Resuscitations	17	47	17	63	40	89
Unsuccessful Resuscitations	19	53	10	37	5	11

* Gross mortality figures, including monstrosities and anomalies incompatible with life.

vernix caseosa or blood be carried into the trachea, it will gradually be sucked into the smaller bronchioles and cause permanent multiple obstruction to the respiratory passages.

13. Wilson, J. L.: J. Pediat. 23: 482, 1943.

The extent to which the infant is affected by the anesthetic also plays a part in this problem. If the infant is but little narcotized or anesthetized, he will probably have laryngeal spasm when viscid fluids attempt to enter the larynx. In this case he will show symptoms of hypoxia after birth, but simple removal of the obstructing material from his larynx will allow normal respiration to follow.

If he is mildly to moderately depressed by sedative and anesthetic, the laryngeal reflex may fail to operate when aspiration occurs; considerable amounts of viscous fluid material may enter the trachea to be gradually sucked down into the smaller bronchioles.

If the infant is deeply narcotized or anesthetized, he is very unlikely to make any respiratory effort for many minutes after birth and therefore will not aspirate during delivery.

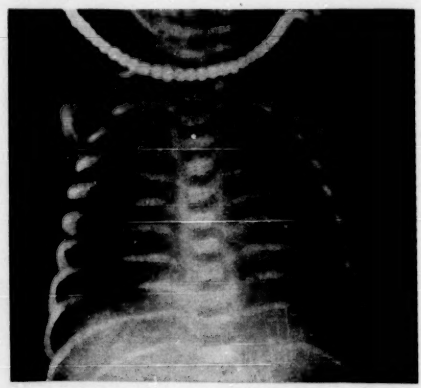

Fig. 7.—Asphyxiated infant born under the influence of morphine. The multiparous mother suffered a very severe hemorrhage. The infant was cyanosed and severely atelactatic after birth. After clearance of the airway and oxygen administration intratracheally, the color and respiration improved markedly.

The infant whose hypoxia is due to more insidious or prolonged causes does not tend to aspirate because of the depression of the respiratory center. As a rule, no obstructing materials will be found in the airway, but oxygen administration will rapidly relieve the hypoxia.

SUMMARY

The physiology and pathology of atelectasis and asphyxia are discussed briefly. Diagrams are presented to show the probable course of events in a hypoxic fetus and newborn infant. Different trains of events are initiated by acute and prolonged hypoxia; however, the final common path is the same for the two.

The newborn infant with an obstructed airway is usually helpless until the obstruction is removed. Oxygen administration into the trachea of a severely hypoxic infant often results in a dramatic recovery. The further neonatal course of most of the infants resuscitated indicates that they are none the worse for their experience. It is believed that the essentials of resuscitation are gentle handling, a clearing of the airway and the administration of oxygen, if necessary, to correct hypoxia.

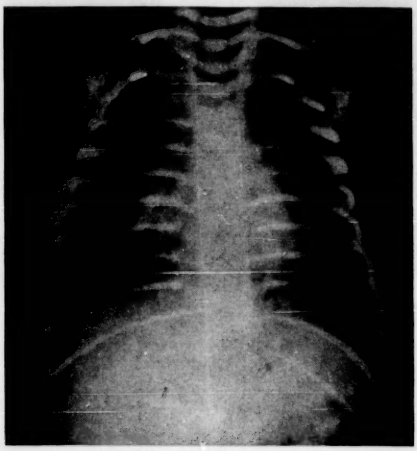

Fig. 8.—The same infant as in figure 7, one day later. Infant's color and respiration were satisfactory.

A hypothesis is advanced to explain why certain hypoxic infants aspirate maternal discharges while others do not. The prevention and treatment of asphyxia of the newborn is an important method of lowering the stillbirth and neonatal death rate. A simple apparatus has been designed to provide safe suction followed by oxygen therapy.

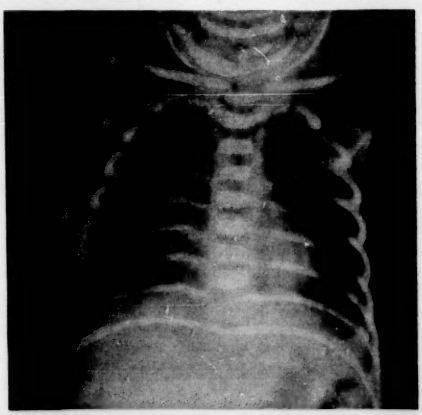

Fig. 9.—The same infant as in figures 7 and 8. Six days after birth the infant appeared normal clinically. The heart is now normal in size, and the lungs well aerated.

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METHOD FOR OBJECTIVE INVESTIGATION OF STRABISMUS

Emanuel Krimsky, M.D., Brooklyn

The need for an objective evaluation of strabismus has been recognized for a long time, but only in recent years has the role of the corneal light reflex in determination of the true position of a deviating eye and its associated image responses been scientifically explored. Impetus was given to this study by the development of the major Wheatstone stereoscope and, somewhat later, of the major Brewster stereoscope,[1] in which opaque targets were replaced by brightly illuminated translucent targets to elicit meaningful corneal light reflexes.

Ophthalmologists, physicists, physiologists and anatomists have all contributed to the present knowledge of strabismus. In a brief report the names of only a few of the early pioneers who have stimulated present-day thinking and practice can be mentioned. In 1858 Alfred Carl Graefe [2] introduced the familiar cover, or screen, test, by means of which alternate covering of one eye yields useful information with regard to latent and manifest strabismus. Graefe was also the first to report on the image responses of the eyes examined with a prism. In one case he produced a diplopia artificially to determine the nature of a latent ocular deviation; in another, by placing a prism in a base-out or base-in position, he was able to ascertain the dynamic, or fusional, responses of the eyes. Only by questioning the patient could he elicit image responses, and these were interpreted in terms of the optical effect of the prism and physiologically by the retinal responses in association with or as a result of the applied prism.

In 1862, Donders [3] studied the position of the fixational corneal light reflex in the pupillary space and introduced the term "angle alpha." Some 10 years later, Javal [4] introduced the arcuate method of measuring ocular deviation, by moving of a test light along a perimeter arc until it is brought into line with the center of the pupil of the deviating eye. At about the same time Nagel [5] investigated the meaning of the visual axis. A few years later Landolt [6] added his great contribution on the fixational position of the corneal light reflex, while Hirschberg [7] attempted to interpret ocular deviation quantitatively on the basis of the apparent linear displacement of the corneal light reflex. In the last years of the nineteenth century Maddox [8] and Priestley Smith [9] modified Javal's method, while retaining the corneal light reflex principle.

I could continue at length to name the many men identified with the early development of the modern concept of strabismus. In Europe there were, among others, Graefe, Donders, Javal, Helmholtz, Nagel, Landolt, Hirschberg, Tscherning, Tschermak, Purkinje, Hering, Priestley Smith, Maddox, Worth, Bollman and Bielschowsky; in the United States, Risley, Stevens, Burnett, Prentice, Jackson, Savage, Knapp, Duane, Verhoeff, Howe, Lancaster, and many others.

The theories regarding strabimus advanced by the many investigators of the ophthalmological renaissance that began about the middle of the nineteenth century lend themselves to objective proof through controlled inspection of the corneal light reflex by means of a flashlight and prism.[10] These two simple means can be used to establish (*a*) positional status of the eyes; (*b*) image responses in latent strabismus, as well as in manifest strabismus, through controlled study of the corneal light reflexes, and (*c*) correlation of both image and positional responses in terms of the corneal light reflexes.

FIXATIONAL CORNEAL LIGHT REFLEX

The position of the corneal light reflex when the eye fixes on a light is known as the fixational corneal light reflex and is the pivotal point in determining whether an eye is straight. A fixational corneal light reflex is in a direct line with the fovea behind; it also represents the intersection of the corneal highlight on or in close proximity to the visual axis. For ascertainment of the fixational position for the corneal light reflex one eye is covered and the patient is instructed to look with his uncovered eye directly into a flashlight held by the examiner beneath his master, or dominant, eye at a distance of 13 to 15 inches (33 to 38 cm.) from the patient. This test is then repeated for the other eye.

The position of the corneal light reflex in each eye is noted in relation to the center of the pupillary space and, depending on its pupillary position, the fixational reflex is classified as central or paracentral or angle gamma. Usually a paracentral fixational corneal light reflex is nasal to the pupillary center and is known as positive angle gamma; occasionally it is temporal to the pupillary center and is then known as negative angle gamma. The angle gamma position should be noted but need not be measured. To study the corneal light

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Figures 2, 3, 4 and 5 are from Krimsky, E.: The Management of Ocular Imbalance, Philadelphia, Lea & Febiger, 1948, and are used with permission of the publisher.

1. Krimsky, E.: The Stereoscope in Theory and Practice, Brit. J. Ophth. **21**: 161, 1937; Modification of the Brewster Stereoscope for Clinical Requirements, Arch. Ophth. **26**: 808 (Nov.) 1941.

2. Graefe, A. C.: Klinische Analyse der Motilitätsstörungen des Auges, Berlin, Peters, 1858.

3. Donders, F. C.: Die Refractionsanomalien des Auges und ihre Folgen, Arch. f. d. Holländ. Beitr. z. Natur- u. Heilk. **3**: 327, 1864; translated into English: On the Anomalies of Accommodation and Refraction of the Eye, London. New Sydenham Society, 1864. Donders, F. C., and Diojer, D.: Die Lage des Drehpunkten des Auges, Arch. f. d. Holländ Beitr. z. Natur- u. Heilk. **3**: 260, 1864.

4. Javal, É.: Du Strabisme, Ann. d'ocul. **65**: 97 and 197; **66**: 5, 113 and 209, 1871.

5. Nagel, A.: Über das Vorkommen von wahren Rollungen des Auges um die Gesichtslinie, Arch. f. Ophth. **14**: 228, 1868.

6. Landolt, E.: Sur la Strabométrie, Ann. d'ocul. **74**: 61, 1875.

7. Hirschberg, J.: Quantitative Analyse des Schielens und der Schieloperation, Beiträge z. prakt. Augenh. **8**: 46, 1876; Beiträge zur Lehre vom Schielen und von der Schieloperation, Centralbl. f. parkt. Augenh. **10**: 5, 1886; Eine Anmerkung über das regelmässig abwechselnde Schielen, Centralbl. f. prakt. Augenh. **8**: 193, 1894.

8. Maddox, E. E.: A New Test for Heterophoria, Ophth. Rev. **9**: 129, 1890.

9. Smith, P.: The Mechanism of Binocular Vision and the Causes of Strabismus, Brit. M. J. **1**: 1489, 1896.

10. Krimsky, E.: The Fixational Corneal Light Reflexes as an Aid in Binocular Investigation, Arch. Ophth. **30**: 505 (Oct.) 1943; The Effect of a Prism on the Corneal Light Reflex, Arch. Ophth. **39**: 351 (March) 1948.

reflexes in both eyes, the examiner looks at each eye successively, the alternate fixation being so rapid that the view obtained is practically simultaneous.

Ocular deviation implies failure of the two eyes to focus their visual axes on a common point. The degree of ocular deviation is determined by the amount of angular disparity in relation to the imaginary or estimated normal binocular focusing angle. When the eyes are fixing straight, the fixational positions of the corneal light reflexes in the pupillary spaces are constant. When there is ocular deviation, the corneal light reflex in the deviating eye is displaced from its fixational position and the amount of apparent displacement is the measure of the ocular deviation. If the eye turns inward, the corneal light reflex is displaced outward, while in a downward turn the displacement is upward. In other words, the corneal light reflex is displaced in the direction opposite to that of the ocular deviation.

Fig. 1.—Method of observing the corneal light reflexes with a flashlight held 13 inches (33 cm.) in front of the patient's eyes.

An objective study of strabismus also includes a determination of image responses. In normal straight eyes in which the corneal light reflexes are in their respective fixational positions, binocular single vision is due to the imaginary superposition of one fovea on the other. In such straight eyes convergence or divergence by prism will serve to establish the maintenance of fusion under stress, and vertically placed prism will upset fusion and induce an artificial diplopia that can be interpreted objectively by the positions of the corneal light reflexes. In paralytic manifest strabismus, on the other hand, there is often spontaneous diplopia, and in chronic nonparalytic strabismus there is usually visual suppression. The nature of retinal correspondence, as well as rudimentary manifestations of fusion amplitude response, can be established or confirmed by means of the corneal light reflexes.

It is possible to investigate binocular position and function systematically by controlled testing of the corneal light reflexes, without questioning the patient. In a few instances, as in retinal correspondence or in visual suppression, a question or two will help to reinforce the objective findings. With the flashlight alone or together with a prism, the following data can now be ascertained objectively:

1. Monocular fixation
2. Binocular fixation status when the eyes are normally straight
   - (*a*) status in the primary position of gaze for 13 inches (33 cm.) and for 20 feet (6 meters)
   - (*b*) diagnosis and measurement of latent deviation, for 13 inches and for 20 feet
   - (*c*) cardinal positions of gaze
   - (*d*) near point of convergence
   - (*e*) separation between the visual axes (interpupillary separation)
   - (*f*) head tilt
   - (*g*) prism convergence and prism divergence for 13 inches and for 20 feet
3. Status in manifest strabismus
   - (*a*) position of the deviating eye
   - (*b*) degree of deviation
   - (*c*) image responses (diplopia or visual suppression)
   - (*d*) visual suppression
   - (*e*) retinal correspondence
4. Differential diagnosis between visual suppression and prism convergence

MONOCULAR FIXATION

In the study of monocular fixation, each eye should be tested separately while the other eye is covered (fig. 1). It should be remembered, however, that foveal fixation is usually poor in marked amblyopia of functional origin or in central choroiditis with foveal damage, and in such conditions a fixational position of the corneal light reflex hardly exists. In extreme functional amblyopia associated with manifest strabismus, the corneal light reflex is displaced eccentrically when monocular fixation is attempted and is known as false macula. This should not be confused with a normal paracentral fixational angle gamma position.

When either eye is observed to fix successfully while the other eye is covered, the ability to maintain fixation with rotation of the eye can then be determined. This is done by having the fixing eye follow a moving test light and noting the extent through which the fixational position of the corneal light reflex is maintained.

BINOCULAR FIXATION WHEN THE EYES ARE NORMALLY STRAIGHT

Primary Position of Gaze.—In examination for the fixational position of the corneal light reflex in the primary position of gaze when the patient is looking straight ahead, due allowance should be made for the slight angular disparity between the examiner's visual pathway and the flashlight at which the patient fixes. In the 13 inch test the flashlight is held beneath the examiner's eye (fig. 1). In the 20 foot test, however, the patient is instructed to look at a distant 75 or 100 watt lamp while the examiner lowers his head slightly to observe the corneal light reflexes at close range. This introduces a negligible error, which is too slight, however, to affect the reliability of the observations

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and is considerably less than is usual with the customary side to side positions of the heads of examiner and patient.

Latent Deviation.—For an objective interpretation of heterophoria, understanding of an orthophoric response without latent deviation is advisable.

Fig. 2.—Orthophoria response with the prism reflex test. Upper, the normal positions of the light reflexes are noted before the prism is used; lower, the corneal light reflex is vertically displaced in one eye with base-down prism.

In orthophoria in which there is no latent deviation, the corneal light reflex in the eye behind a 20 D. base-down prism is displaced toward the apex of the prism—i. e., upward—and the false image is similarly projected (fig. 2). Objective proof of diplopia can be obtained by placing a colored glass over one eye and having the patient fix on the colored flashlight image; the uncolored corneal light reflex will yield a higher image when it is higher than the position of the fixational, colored corneal light reflex. The effect of such a prism may be compared to an imaginary transparent cover in eliciting a latent position of the eye. The 20 D. base-down prism produces a more marked displacement of the corneal light reflex than the 10 D. prism, and the examiner can therefore more easily observe the corneal light reflex move up and down in either eye with alternate fixation.

A prism-produced oblique displacement of the corneal light reflex from its fixational position in either eye is proof that exophoria or esophoria is present. Definite evidence of heterophoria and its degree can be obtained by observing the position of the reflex and its movements in each eye with alternate fixation, as well as the movements of the lids. In exophoria, the corneal light reflex is displaced upward by the prism and nasally by the turning-out of the eye behind the prism (fig. 3). The nasal component in this displacement is corrected by the use of a supplementary base-in prism. With such a base-in prism, the corneal light reflex can be brought into vertical alinement with its fixational position. When this has been accomplished, the corneal light reflex will move straight up and down with alternate fixation, as in orthophoria. A measurement of the amount of exophoria in prism diopters, the patient holds a prism base down in a prism holder in front of his eye. The examiner is then free to hold a flashlight in one hand and to operate a rotary prism for measurement with the other hand.

Cardinal Positions of Gaze.—Binocular fixation implies an established position for the fixational corneal light reflex in each eye. Provided the flashlight is held beneath the examiner's eye, no matter how the eyes are rotated the light reflexes should remain in these constant fixational positions. The examiner may study eye movements either by moving his own head and the flashlight to follow the patient's eye movements or by keeping his eye and flashlight in one position and rotating the patient's head in different directions to induce eye rotation. The integrity of the binocular motor field is determined by the extent through which the fixational light reflexes are maintained as the eyes are rotated for various cardinal positions of gaze. The moment binocular fixation is broken, the corneal light reflex in one eye is suddenly displaced from its fixational position, and may or may not be accompanied with diplopia.

If in manifest strabismus the displaced corneal light reflex remains constant with rotation of the eyes, the deviation is comitant, or nonparalytic. Changes in the displacement of the corneal light reflex with rotation of the eyes are a sign of paralysis of one or more of the ocular muscles.

Fig. 3.—Exophoria response with the prism reflex test. Upper, the normal positions of the light reflexes are noted before the prism is used; lower, the corneal light reflex is obliquely displaced nasally in one eye with base-down prism.

Near Point of Convergence.—The corneal light reflexes are an excellent means for interpreting and measuring the near point of convergence. A test light is held in a symmetrical position about 13 inches in front of the patient's eyes and the position of the fix-

ational corneal light reflex in each eye is noted. As the light is gradually brought nearer to the eyes, they are seen to converge. The corneal light reflexes remain in the original fixational positions until the near point limit of convergence is reached, when the reflex in one

Fig. 4.—Objective proof of prism convergence with the prism reflex test. Upper, the normal positions of the corneal light reflexes are noted before the prism is used; lower, maintenance of the same fixational pupillary positions behind base-out prism proves prism convergence.

eye suddenly shifts inward because that eye has given way and turned outward. The eye that continues to fix is the dominant eye. The distance from the flashlight to the base line connecting the centers of rotation of the two eyes determines the near point of convergence.

Separation Between the Visual Axes.—Measurement of interpupillary separation is an accepted practice, but the methods of measuring this separation are not uniform, with the result that appreciable differences in readings often result. In one method, the examiner adjusts his eye for a position symmetrical to his patient's eyes and with a ruler over the patient's nose measures the distance between corresponding landmarks on the two pupils. In another method, the examiner instructs the patient to fix his right eye on the examiner's left eye and his left eye on the examiner's right eye, aiming to obtain a pupillary separation comparable to that of distant gaze. Neither of these methods, however, is sound in principle, for both are based on the separation between the centers of the two pupils and not on the separation between the visual axes of the two eyes at their centers of rotation.

A simple method of measurement, using a calibrated trial frame, makes use of the fixational corneal light reflex. One eye is covered, and a trial lens with a vertically engraved line running through its geometric center is inserted for the other eye. The examiner looks with his dominant eye directly into the lens-covered eye, notes the exact position where the engraved line covers the fixational corneal light reflex and records the reading. This is half of the interaxial separation. The test is then repeated for the other eye. The combined reading of the two eyes is the total distance between the visual axes. Even this method can be improved on by photographic registration of the corneal light reflexes.

Head Tilt.—It is important to discover the origin of the head tilt that may be associated with strabismus. The examiner first notes the position of the corneal light reflex in each eye when the head is in the preferred position. He then rotates the patient's head and again looks for changing positions of the corneal light reflexes. If the fixational corneal light reflex in each eye remains unchanged, it is strong objective evidence that the head tilt is not due to involvement of ocular muscles. Displacement of the corneal light reflex in one eye when the head is moved from its preferred position is a sign that the head tilt is of ocular origin and therefore compensatory in nature, an attempt to attain binocular fixation or to reduce unequal pull in the ocular muscles to a minimum.

Prism Convergence and Divergence.—In measurement of prism divergence, a hand rotary prism is operated in a base-in fashion and the extent noted to which the fixational position of the corneal light reflex in each eye can be maintained with increasing prism.

Prism convergence is demonstrated objectively by maintenance of the fixational position of the corneal light reflex in each eye as the strength of the base-out prism is increased (fig. 4). When the limit of tolerance has been reached, the corneal light reflex in one eye suddenly shifts from its fixational position, a sign that binocular fixation has been broken. As long as the

Fig. 5.—Measurement of divergent strabismus with the prism reflex test. Upper, nasal displacement of the corneal light reflex in eye occurs when the eye turns out; lower, 30 D. of base-in prism restores the displaced reflex to a fixational pupillary position and thereby serves as a measure of the amount of the squint.

fixational position of the corneal light reflex is maintained in both eyes, binocular single vision must be present. As soon as the corneal light reflex in one eye shifts, proof that fixation has been broken, there is objective evidence of induced diplopia; this is particu-

larly apparent when the patient makes instinctive efforts to change fixation alternately from one image to the other. The nature of the induced diplopia can be readily determined by the position of the corneal light reflex in the nonfixing eye. If the corneal light reflex

Fig. 6.—Gross disparity in responses with the Hirschberg and prism reflex methods. Upper, a displaced position of the corneal light reflex at the corneal limbus suggests 45 degree strabismus with the Hirschberg method; lower, 60 D. of prism (equivalent to 30 degrees of deviation) is sufficient to restore the displaced corneal light reflex to a central, or fixational, pupillary position.

in one eye is displaced nasally or is nasal to the fixational position, the diplopia is crossed, or heteronymous.

STATUS IN MANIFEST STRABISMUS

Position of Deviating Eye.—It is generally agreed that displacement of the corneal light reflex from its fixational position is ample objective proof of manifest strabismus. The diagnosis is easily established with a flashlight alone, and with a flashlight and prism the ocular deviation can be accurately measured by artificial restoration of the displaced corneal light reflex to a fixational position.

In exotropia, in which the corneal light reflex is displaced inward, or nasally, deviation is measured with a base-in prism. A hand rotary prism is held close to the eye and operated in the base-in range until the displaced corneal light reflex is restored to the fixational position. The reading on the rotary prism is the measure of the deviation. To prove that the reading is correct, a confirmatory screen test is then done to establish that eye movement has been stopped.

Heretofore, the commonly used method for judging ocular deviation in terms of the displaced corneal light reflex has been that of Hirschberg.[7] In this method, the linear displacement of the corneal light reflex from the pupillary centers is measured and a crude estimate is made of the angle of deviation. That the Hirschberg method falls short of being exact is shown in a comparison of the readings obtained with it and those obtained with the prism (fig. 6) and the arcuate (anglometer) method.

Diplopia.—In the early stage of strabismus, as of paralytic origin, diplopia is frequently present. The position of the displaced corneal light reflex in relation to its fixational position indicates how the false image is being projected. In paralytic esotropia, the corneal light reflex is displaced outward, or temporally, and the false projection is homonymous. By placement of a colored glass over the straight, or fixing, eye, the displaced position of the uncolored corneal light reflex in the deviating eye indicates the projection of the false uncolored image.

In exotropia, the corneal light reflex is displaced nasally and the false image is therefore projected to the opposite side of the fixational image, crossed diplopia being indicated in this way.

Visual Suppression.—The gross appearance of the eyes is not a good criterion for judging whether there is a slight manifest strabismus. But the corneal light reflex provides reliable and objective proof not only of the existence of a minimal amount of strabismus but also of the associated visual suppression accounting for monocular single vision simulating normal binocular single vision. Moreover, with a flashlight and prism, proof can be obtained of a normal binocular fixation or a circumscribed suppression zone. In either case, diplopia can be induced by an increase in the strength of prism. In visual suppression due to manifest squint the corneal light reflex moves over the pupillary area with rotation of the prism, whereas in normal binocular fixation the reflex in each eye is maintained in its fixational position as long as single vision is maintained. In manifest squint, diplopia is induced when the corneal light reflex moves into a perisuppression zone; in normal binocular fixation diplopia is induced as soon as the corneal light reflex moves from its maintained fixational position in either eye. In addition, the area of suppression in manifest strabismus can be mapped with use of a rotary prism; close observation of the shifts in position of the corneal light reflex will disclose the area of retina that is involved.

Retinal Correspondence.—The principle of induced diplopia by prism can be applied clinically to the detection and measurement of retinal correspondence. Normal binocular fixation may be regarded as simultaneous registration of images on both foveas. Manifest strabismus is usually accompanied with visual suppression in the deviating eye. In such cases, when the corneal light reflexes are restored to their fixational positions in both eyes by prisms, an added prism is required to shift the light stimulus vertically above or below the fovea beyond the foveal suppression area in the nonfixing eye to produce an induced diplopia. The nature of the induced diplopia indicates whether retinal correspondence is normal or abnormal. When the images are vertically alined, the retinal correspondence is normal, since the displaced corneal light reflex is directly above the fixational position. An oblique arrangement of the double images, though displacement of the corneal light reflex is exactly upward from its fixational position, is evidence of an abnormal retinal correspondence.

CONCLUSIONS

1. A flashlight and prism are adequate tools for studying the corneal light reflexes.

2. The corneal light reflex, when studied in a controlled manner, is the only dependable landmark or guide for an objective evaluation of normal straight eyes, as well as of manifest strabismus.

3. Accurate observation of the positions of the corneal light reflexes is essential in a study not only of ocular deviation but also of induced or spontaneous image responses.

4. With the prism reflex test, based on the property of a prism to deflect a beam of light toward its apex, the amount of strabismus can be measured objectively.

5. The corneal light reflex can be used to study the state of binocular balance, binocular position and binocular function.

ABSTRACT OF DISCUSSION

DR. RODERIC O'CONNOR, Oakland, Calif.: I started using the reflection test when I was doing clinic work in Manila in 1907, 1908 and 1909. Chinese with an epicanthus lower on one side give the appearance of having crossed eyes. Many babies have the same appearance. In many persons, one side of the face is higher than the other and gives the appearance of a vertical disalinement. This test determines the diagnosis in all three conditions. It is more accurate in checking upshoots and downshoots than the corneal margins. Marked inward decentration of the visual axes simulates divergent squint. I use the test to check convergence. It is remarkable how many persons miss a second image when convergence fails as shown by the reflections. I also use the test to diagnose the presence and degree of paresis, or paralysis, of divergence. It is most important not to overlook this condition in a case of convergent strabismus, so that the patient, or his parents, can be warned of the difficulties ahead. I use the test at 10 feet (3 meters) as well as for near, because the visual axes of many patients, cared for surgically, become parallel for far before they do for near. At this distance a small telescope and a focusing beam flashlight are needed. I have to confess a complete lack of interest in the angular measurement of squint. After a short experience with my very positive cinch shortening, it was impressed on me that there is no close relation between the amount of tendon shortening and the degrees of final result. For those who believe the angular measurement to be worth while, I doubt that Dr. Krimsky's method can be improved on. I concentrate on looking for underactions and overactions, contractures and vertical disalinements in the search for the cause of the squint. I then treat what I think is the cause and pay no attention to the angular degree of deviation, this being merely a symptom. It is not rare to see accommodative squints completely cured with glasses alone. On removal of lenses the eyes go into wide convergence. Apropos of treating the cause, I would refer to my report of four cases of lateral squints cured by cinching of a vertical tendon as the only operation. This was in the *American Journal of Ophthalmology*, May 1933. I can see no use for the reflection test in the study of patients with phorias. These have binocular vision, and all are old enough to give correct answers to ordinary Maddox rod and the usual diplopia tests. In phorias a quantitative estimation of the real deviation can be made only with the aid of the prolonged occlusion test. Since 1917 I have used this test in approximately 10,000 cases and would feel lost without the information it affords. The weak point in the use of this test for quantitative purposes is the need for an accurate estimate of the symmetrical location of the reflections. An error of 0.5 mm. is a serious one in regard to angles. If more ophthalmologists will use the prolonged occlusion test for the diagnosis of squints in babies and act promptly and properly on the information it affords, more patients with strabismus will have correct vision.

DR. GEORGE N. HOSFORD, San Francisco: Dr. Krimsky emphasizes the use of the corneal light reflex as the main feature on which he relies for objective information on the position of the eyes, retinal correspondence and suppression. I have no doubt that one can train himself in this method. I would estimate that Dr. Krimsky's method can be relied on to about the same degree as retinoscopy. I was impressed by his modification of the Hirschberg test. He uses an appropriate amount of prism to move the corneal light reflex from an eccentric position to a position that appears to be in the center of the cornea of the deviating eye and then records the amount of prism necessary, instead of estimating how many millimeters the reflex is from the apex of the cornea of the deviating eye and then multiplying by 7.5 to obtain an estimate of the amount of deviation. In applying the Hirschberg test to older children who can and will fix a light at 20 feet, at 13 inches and in the cardinal directions of the gaze, Dr. Krimsky seems to me to be reversing himself and relying solely on his ability to judge when the corneal light reflex is in the center of the cornea, even when the patient is looking through a prism of 20 D. or more; this obviously disturbs the view somewhat, instead of taking advantage of the most easily detected objective phenomenon connected with the eye, its motion. With the cover test and loose prisms, it is not difficult to detect 1 degree of deviation the first time it is tried on a patient who can fix. I submit that it will be difficult for most of us to tell when the corneal reflex is within 5 degrees of the center of the cornea and, in many cases, 10 degrees of the center. Dr. Krimsky admits that in the presence of high degrees of amblyopia and of disease in one or both macular regions, the method leaves much to be desired, as obviously do all other methods in these conditions, yet, here the corneal light reflex test is the most reliable test available. I should also take exception to Dr. Krimsky's statement that his method enables one to differentiate between head tilt due to imbalance of the extraocular muscles and that due to conditions of the neck and body, which are properly the province of the orthopedic surgeon. The test in such cases seems to me to be mainly a test of the amplitude of fusion. What we need most in the field of ocular deviation is more research on fusion and how to stimulate it when it does not exist, better methods of treating amblyopia and suppression, rather than more accurate objective measurement of the existing deviations. The work of Dr. Swan and his co-workers constitutes a hopeful start in that direction.

DR. EMANUEL KRIMSKY, Brooklyn: Dr. Hosford stated that he disagreed with that portion of my paper that I was unable to read for lack of time. Had I known that in advance I would have presented the deleted portion of the paper as a basis for comment. The objective aspects of the corneal light reflex test both with and without prism are no longer a subject of controversy, since they can be photographically proved. Because this method of examination is new, questions are naturally raised by those who have been accustomed to time-honored methods. Occlusion has been a controversial topic and has not been discussed in this paper, which deals with an objective method of examination based on controlled inspection of corneal light reflection. An attempt has been made not to revolutionize binocular investigation but to lend objective meaning to the theories and accepted teachings of Graefe and his successors. In my book I have also shown how the Maddox rod test could be made objective through the aid of the corneal light reflexes. Dr. O'Connor has said, "I can see no use for the reflection test in the study of phorias." My answer is that if one recognizes the need for testing and measuring phoria based on the teachings of Graefe, then by all means one should complement such a study by inspection of the eyes and the corneal light reflexes. Dr. O'Connor furthermore says, "I have to confess a complete lack of interest in the angular measurement of squint." To deny the need for measuring the angle of squint is to refute the accepted aims of current teachings. Everyone has a right to approve or reject the need for testing. I do not insist that measurements are necessary, although this is generally accepted. I merely offer an objective method of study using a flashlight and a prism.

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IMPERFORATE ANUS AND RECTO-URETHRAL FISTULA IN A TWENTY-SEVEN YEAR OLD MAN

REPORT OF A CASE

J. James Duffy, M.D., Los Angeles

Imperforate anus—some form of developmental defect of the anorectal bowel, varying from simple stenosis of the anus to absence of anus and rectum—occurs once in every 6,000 to 10,000 births. The types of malformations have been classified into four categories by Ladd.[1] When the additional developmental anomaly of rectourethral of rectovesical fistula in conjunction with the imperforate anus occurs, "in the male, the fistulous termination of the rectum in the bladder or urethra unless relieved is followed by early death from pyelonephritis."[2] After a thorough survey of the literature and personal communications with American surgeons,[3] I believe the present case to be the only one in which a man with a Ladd type 3 imperforation and rectourethral fistula has survived without definitive surgical therapy until the age of 27 years. The end result of the surgical treatment is considered satisfactory scientifically—to the patient, excellent.

REPORT OF CASE

A white unmarried foreman of a welding division, was born on Jan. 7, 1922. The attending physician immediately noted that the infant had no anal opening of any kind and no dimple in the skin over the perineum, which was smooth and continuous. Otherwise, he appeared normal. Ten hours later the physician, without the aid of roentgenograms or other diagnostic facilities, made a deliberate stab wound into the pelvis along the tip of the coccyx, successfully entering the rectal segment. Maintenance of a watery stool at all times with use of a proprietary cathartic enabled the child to grow rather normally to 5 years. During these five years the mother noted the frequent passage of fecal content in the urine, but this important point was overlooked in the history from the age of 5 years onward.

At 5 years of age the child indulged himself by eating a mass of indigestible objects, including buttons, nuts, washers, bolts, coins and dried seeds. An immediate bowel obstruction ensued, for which a left inguinal double barrel colostomy was done.

The child progressed fairly well until he was 12 years old, when he required the removal, under anesthesia, of impacted scybala from the distal loop by morcellation through a scope. Although pyuria was a constant problem, the urethral fistula could not be demonstrated at that time. Urinary frequency was a continual complaint, with nocturia (six and seven times), but little urine being voided at any time. Urinary tract infections were constant, with flare-ups, but none of them ever threatened him seriously. Adolescence began at the usual age, and normal primary and secondary sex characteristics developed.

In school the patient did well scholastically, but the handicaps of a colostomy in an otherwise healthy young man were many. He could not engage in play or athletics; his clothes did not fit like those of other children; he was always conscious of the odor from the colostomy bag, and he therefore avoided close contact with people. He was not able to go swimming. In short, he grew up with the constant fear of unheralded bowel movements and the usual colostomy odor.

All this had little or no bad effect on his personality or behavior pattern. Being mechanically inclined, he directed his energies toward mechanics, in lieu of social amenities. However, he also had a normal sex drive and ambitions to have dates and marry. This was his greatest obstacle as of May 1949.

In May 1949 he consulted a urologist, Dr. W. G. Schultz, of Tucson, Ariz., because of a rather severe flare-up of the urinary tract infection. On cystoscopic examination it was possible readily to pass a ureteral catheter into the utricle of the posterior urethra. An unlimited amount of sodium monoiodomethane sulfonate (skiodan®) could be injected through the catheter because it emptied into the lower segment of the colostomy tract (fig. 1). This for the first time established the true factors behind the persistent urinary tract infections and also the futility of attempts to clear the urine of pus. Dr. Schultz advised surgical survey for evaluation of the condition.

I first observed the patient in June 1949, when the results of study yielded the following information:

The family history was negative for anomalies, and the patient's history was negative except for the present complaint. Physical examination disclosed no abnormalities except for a double barrel low left inguinal colostomy, the upper distal loop being quite redundant and the upper end of the distal loop being retracted sharply (fig. 2). The hair distribution, testes and penis were normal. At the site where an anus would normally occur, the skin was smooth and continuous and there was no evidence of even a small sinus. On volitional contraction of the perineum, however, there appeared a weak pattern resembling an anal sphincteric mechanism, and adjacent to this pattern could be noted three small venous protuberances resembling external hemorrhoids. Such observations in the absence of any anal opening are common and explainable embryologically. At the tip of the coccyx was a scarred area, dry and uninflamed, which appeared to be the remnants of the original fistulous tract established at birth. After use of topical anesthesia the tract could be recanalized with a small probe and later a small catheter. It led into the distal rectal pouch.

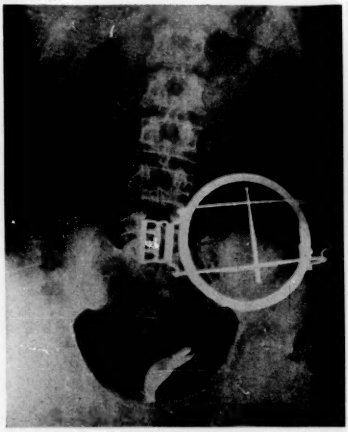

Fig. 1.—Roentgenogram showing cystoscope in place and ureteral catheter inserted through posterior urethra, filling the rectal pouch remnant.

The results of all laboratory analyses were negative, except for the analysis of the urine, which contained more than 200

From the Department of Surgery, Hollywood Presbyterian Hospital-Olmstead Memorial.

1. Ladd, W. E., and Gross, R. E.: Abdominal Surgery of Infancy and Childhood, Philadelphia, W. B. Saunders Company, 1941.

2. Wangensteen, O. H.: Intestinal Obstructions: A Physiological and Clinical Consideration with Emphasis on Therapy, Including Description of Operative Procedure, ed. 2, Springfield, Ill., Charles C Thomas, Publisher, 1942, p. 280.

3. Ladd, W. E.; Swenson, O.; Ochsner, A.; Bacon, H. E.; Liburt, J.; Rosenblatt, M. S.; Cattell, R. B.; Lee, M. J., Jr.; Dmytryk, E. T.; Crowell, E. A.; Potts, W. J.; Rhoads, J. E.; Wangensteen, O. H.; Norris, W. J.; Brophy, T. W., and Brayton, D.: Personal communications to the author.

pus cells per high power field and a trace of albumin. The blood cell count, sedimentation rate, gastric analysis and electrocardiograms all gave normal values. The Wassermann reaction was negative. Urine cultures yielded profuse mixed organisms.

Roentgenologic examination failed to disclose any anomalies, or abnormalities, of the skull, spinal, respiratory, gastrointestinal, urinary and musculoskeletal systems except as noted below.

The examination of the urinary system showed normal kidneys and ureters but a very slight bladder capacity. The passage from the posterior urethra into the rectal pouch has already been discussed (fig. 1).

The colon roentgenograms showed a normal pattern, with the descending colon terminating in a colostomy in the lower left abdominal quadrant. Special precautions were taken in the examination of the lower limb of the colostomy tract, in view of its known communication with the posterior urethra. For this reason it was considered inadvisable to use an aqueous barium sulfate suspension; so an emulsion of barium sulfate and liquid petrolatum was used instead, being introduced through the catheter that had been passed through the old coccygeal fistulous opening. After this, roentgenograms in anteroposterior, oblique and lateral positions were taken at a 48 inch (122 cm.) distance to minimize distortion (figs. 3 and 4). The distal remnant of the bowel extended from the coccygeal fistulous tract directly across the pelvis to the colostomy site; roentgenographically, it appeared to be atrophic,

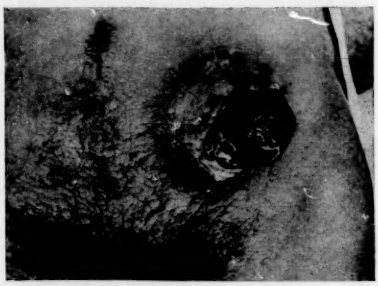

Fig. 2.—Preoperative appearance of colostomy stoma.

taut and devoid of any loops. It measured less than 18 cm. The communication with the posterior urethra is not apparent in these films.

After long study of the conditions and measurements of the films, a course of procedure was planned. The first objective was to divide the rectourethral fistula, since that condition most threatened the patient's life. The next objective, of course, was to restore the bowel and place the anorectal assembly in the perineum if possible. To accomplish these objectives I planned to open the perineum, widely encompassing the coccygeal tract and carrying the dissection up to the rectourethral fistula, divide and tie the fistula, close this field temporarily and then open the abdomen for evaluation of the structures. If enough mobilization of the descending colon and sigmoid and of the distal loop could be obtained, I intended to make an anastomosis, close and remove the colostomy and then transplant the fistulous end of the loop into the proper location for an anus and rectum. However, if this distal loop was of poor quality and embedded, I planned to take down the splenic flexure and descending colon, thus freely mobilizing adequate colon to do a "pull through" type of reconstruction. The second plan, however, had to be based on a normal vascular pattern for the inferior mesenteric artery in its distribution to the colon, and this patient might well have had an abnormal vascular distribution.

The patient and his family were informed of the hazards and uncertainties of this operation and then sent home to consider it for a month or more or to seek further consultation.

One month later the patient was admitted to the Hollywood Presbyterian Hospital. A typewritten proposed plan of procedure was prepared in detail for the entire surgical team, and this saved a great deal of time during the procedure. To disconnect the urethral fistula, a urologist, Dr. Carl Rusche, was called in. This procedure took longer than planned, and, since the patient's blood pressure was unfavorable for operation, the perineum was closed and the balance of the procedure post-

Fig. 3.—Transverse preoperative roentgenogram showing the short, taut remnant of bowel from the coccygeal fistula to the colostomy stoma.

poned. The patient was sent home for a short time, but one of the feared complications had arisen, namely, incapacity for erection.

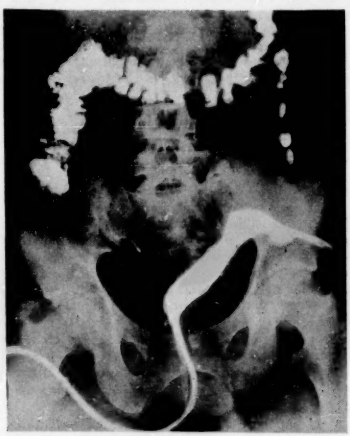

Fig. 4.—Anteroposterior preoperative roentgenogram showing the extent of the lower part of the bowel from the coccygeal fistula to the colostomy stoma.

On Nov. 22, 1949 the patient returned to the hospital for definitive surgical reconstruction. Reexaminations indicated that the closure of the rectourethral fistula had been adequate, although the urine contained 100 to 200 pus cells per high power field and stained slides showed gram-positive diplobacilli.

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On December 3, with the patient under intratracheal anesthesia, surgical operation on the bowel was begun. Since the rectourethral fistula was now closed, I changed my procedure somewhat. The colostomy stomas were inverted and the skin sutured and sealed to avoid contamination. A long left rectus-displacing incision was made. The preliminary exploratory examination failed to disclose any additional anomalies, except that the descending colon had an extremely short mesentery for the entire length. Examination of the distal loop of the colostomy tract showed it to be of very thin texture but not to be bound down as tightly as would appear from the roentgenograms. With traction and manipulation of this distal segment, it was possible to gain considerable mobility. With traction, manipulation and dissection, it was found that considerable increase in length could be had in the descending colon and sigmoid area without disturbance of the blood supply. With this increased length in both parts it was now possible to do an end to end anastomosis of the bowel, after it was divided from the colostomy exit at the inner abdominal wall. The appendix was also removed. The entire colostomy site was removed and the wall closed without drainage. After this, the abdomen was closed without drainage. The tissues for several centimeters around the former colostomy site were of very poor quality but have held well. The patient was then put in the lithotomy position. With the forefinger the scar tissue of the fistulous opening was dilated until the mucosa of

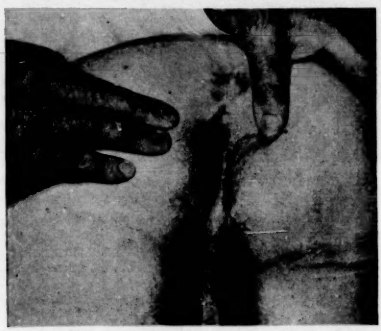


Fig. 5.—The new anal opening as it appeared five months postoperatively.

the bowel was reached. Instead of trimming away this scar tissue with bowel attached to one side and skin to the other, I decided to use it for a bridge to secure the bowel in the perineum, after having found that multiple incisions through the scar tissue made it amenable to adequate dilatation without tearing of the distal end of the bowel. A wide elliptical skin incision was made around this fistulous opening and the incision carried down the midline across the perineal plate, where the anal sphincter remnants were presumed to be. Macroscopically, these sphincter remnants were disappointing. The coccyx was removed. The lower limb of bowel was now widely encompassed up to the pelvic floor. The whole bowel was placed in its new position without tension, and the skin edges of the transplant were sutured to the perineal skin. The levator muscles were well approximated, giving substantial support to the bowel. The presacral space was equipped with a drain. At this time a large vented petrolatum gauze pack was placed in the new anal opening, many times larger than the final opening was expected to be. This procedure may be debatable, but, since contractures are one of the commonest problems incident to this work, I intended to start with more than adequate opening while I had anethesia and opportunity. The soundness of this decision will be confirmed by the results.

Postoperative convalescence was uneventful. The patient had the first bowel movement of his life on the fifth day, without control. Abdominal wounds both healed per primam. The presacral space drained for a few weeks and healed permanently dry. On January 1, four weeks after surgery, the patient was ambulatory for 12 hours without accident or soiling.

In the second postoperative month, severe bladder pain developed on filling. A cystogram made after the use of topical anesthesia showed that the bladder was making a new and more extensive bed for itself now that it was capable of

Fig. 6.—The abdomen of the patient five months postoperatively.

holding urine. There was practically no bladder capacity originally. Subsequently, this complaint subsided, and capacity became almost normal. The urinary tract infection subsided.

One year later, the results from a surgical standpoint are considered satisfactory. The patient has an anal opening which admits the little finger. It has never been necessary to dilate this opening, but the patient has been instructed to pass his little finger through the opening occasionally to keep a check

Fig. 7.—The new rectosigmoid as it appeared five months postoperatively.

on the gage. He has no dietary restrictions. While he has been advised to move the bowels daily, he has purposely let them go three days to assure himself of a full performance opening, without discomfort. While he does not have true sphincteric contraction over the finger, he does have fully satisfactory control of his bowel movements and flatus. He

states he can go to the toilet electively. Lifting and straining do not produce leakage or incontinence. He wears no pad or other safety device. Fortunately, in this year after surgery, he has not had diarrhea. Capacity for erections has fully returned (figs. 5, 6 and 7).

Socially his restoration is complete. He dates, dances, wears well fitted clothes, swims, travels, takes long hunting trips and only recently inquired about his prospects for entering military service.

The records of 222,173 admissions to the Hollywood Presbyterian Hospital-Olmstead Memorial over the las 25 years have been reviewed for the incidence of anorectal anomalies. Of the patients, 33,812 were newborn infants and 188,361 were adults. Six cases of imperforate anus of some type were found, three among the newborn and three among the adults. Two of the three newborn infants died within 48 hours, and the third was transferred to another hospital; the outcome in the last case is unknown. Of the adult patients, the first was a 30 year old woman with a known low rectovaginal fistula who underwent a cesarean section. The second had a hemorrhoidectomy and was suspected to have congenital anal stenosis. The third adult is the patient in the present case report. The incidence of imperforate anus at the Hollywood Presbyterian Hospital would be one in 11,270 newborn infants, or one in 37,028 admissions.

SUMMARY

The case of a 27 year old man with a Ladd type 3 imperforate anus and rectourethral fistula who was successfully operated on is reported. It is believed to be the only case on record in which the patient survived without definitive surgery until that age.

FASCIAL HERNIAS OF THE LEGS

Maximilian E. Obermayer, M.D.
and
J. Walter Wilson, M.D., Los Angeles

Fascial hernias of the legs, a disorder unfamiliar to many dermatologists, occur weeks or even years after trauma. Both unilateral and bilateral lesions have been observed in the muscles of persons whose legs had been exposed to severe chronic strain, such as athletes, skiers, mountain climbers, foresters and foot soldiers who have exercised in hilly or mountainous country. Most patients are seen by surgeons, who seem to have no difficulty in recognizing the disorder. The various surgical technics used for correction of the condition are described in the comprehensive article by Ihde [1]; an extensive bibliography is appended to this paper.

Many small, symptomless fascial hernias are seen by the dermatologist rather than the surgeon. Patients with these lesions consult the dermatologist because of such unrelated conditions as stasic dermatitis or varicose veins. We suggest, on the basis of our experience, that unless fascial hernia is thought of, the lesions are likely to be incorrectly diagnosed.

From the Department of Dermatology and Syphilology, University of Southern California School of Medicine.

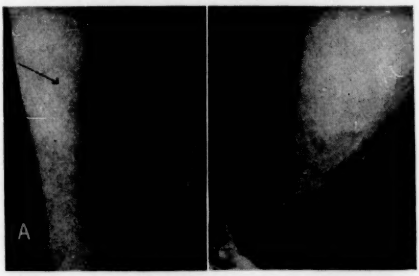
Read before the Section on Dermatology and Syphilology at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 29, 1950.

1. Ihde, H.: On Muscular Hernia of the Leg, Acta chir. Scandinav. 65: 97, 1929.
2. Kitchin, I. D., and Richmond, D. A.: Multiple Muscle Herniae, Brit. M. J. 1: 602, 1943.

REPORT OF CASES

CASE 1.—L. P., a housewife aged 34, complained of calluses, which had been on the feet for several years and of "lumps," which had been present above the right external malleolus for about one year and above the left one for several months. She said that she had had occasional mild shooting pains in the legs.

Examination disclosed, in addition to calluses on both soles, two soft, symmetrical, nontender, nodular protuberances, 1.5 cm. in diameter and 1 cm. in elevation, 15 cm. above the external malleoli. Pressure by the palpating finger easily pushed the nodules back into an apparent defect or hollow. Attempts to aspirate blood and lymph were unsuccessful.



Fascial hernia (case 3).

The patient was presented at the meeting of the Los Angeles Dermatological Society on Dec. 11, 1945. The major portion of the discussion revolved around the possibility that the lesions were hemangiomas; no diagnosis was reached. Later, an article on multiple hernias of muscle, in the *British Medical Journal*,[2] brought to our attention by our colleague, Nelson P. Anderson, led us to the correct diagnosis.

CASE 2.—J. W., a telephone linesman aged 33, complained of itching inflammatory plaques, which had been present on the legs for several months. Examination showed evidence of mild stasic dermatitis. Our experience with L. P. (case 1) enabled us to diagnose as fascial hernias the bilateral protuberances, of the same size and location as those previously described. The patient had been unaware of the lesions.

CASE 3.—M. S., a 56 year old male cook, for three years had been under intermittent treatment, in the form of local sclerosing injections, for recurrent dermatitis hypostatica and varicose veins of both legs. Examination disclosed that between varicosities on the anterolateral surface of the right leg, 15 cm. above the external malleolus, was a nodule 1.5 cm. in diameter and 1.0 cm. in elevation, which had never been subjected to sclerosing injections because no blood had ever been obtained from it. Our previous experiences enabled us to establish, by palpation, that the lesion was a fascial hernia, although on many previous examinations the node had been considered an unusual varicosity.

COMMENT

Small fascial hernias of the legs are apparently not uncommon but go unrecognized because they are usually symptomless. They are ordinarily diagnosed as varicosities or angiomas, but the fact that they yield no fluid and are easily compressed should tend to prevent these mistakes. Unlike varicosities, fascial hernias do not change in appearance when the patient is kept standing for a while. Characteristically, fascial hernias

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appear on the anterolateral portions of the legs, about 15 cm. above the external malleoli. Bilateral involvement is strictly symmetrical.

The several theories advanced for the causation of nontraumatic hernias of muscle have been discussed by Ihde.[1] The relatively frequent occurrence of such hernias in the legs of skiers and mountaineers underlines the importance of strenuous activity, which can lead either to simple stretching of the aponeurotic cover, from pressure by contraction, or to rupture of the fascia, as a result of incoordinated movements. Certain mechanical factors may account for the frequent localization of the hernias about 15 cm. above the malleolus. The increase in volume of the contracting tibialis anticus muscle, combined with the swelling of the contracting antagonists and the resulting transverse pull on the fascia, may lead to stripping of the sheath from the underlying muscle. A constitutional abnormality of the aponeurosis, expressed either as defects of the fibrous layer or as impaired ability to withstand distention, may be the underlying causal factor. J. B. deC. M. Saunders, Professor of Anatomy at the University of California, has pointed out[3] that "approximately 15 cm. above the external malleoli there is very frequently a communicating vein passing from the deep veins to the lesser saphenous." He has expressed the belief that the herniations of muscle take place through the hiatuses in the deep fascia resulting from perforation by the smaller cutaneous vessels.

Although injections of sclerosing solutions may obliterate the nodules,[4] no therapy is indicated since there are no symptoms.

SUMMARY

Fascial hernias of the legs occur either as large swellings, consequent to trauma or prolonged strain, which are usually brought to the surgeon's attention, or as small, circumscribed, often bilaterally symmetrical nodules, which the dermatologist most frequently encounters during examinations for unrelated complaints. Three examples of the latter type, are reported. The necessity for differentiation between fascial hernias and varicosities and angiomas is stressed. A possible explanation for the typical location of the lesions superficial to the tibialis anticus muscle is advanced.

3875 Wilshire Boulevard.

ABSTRACT OF DISCUSSION

DR. J. V. VAN CLEVE, Wichita, Kan.: The dermatologist of today, in his routine examination of patients, must be familiar with every unusual bump, wart or tumor of the skin. He must be qualified to advise his patient what the lesion is and what, if anything, should be done about it. Fascial hernias of the legs certainly fall into this category. In reviewing the literature, we find that these muscle hernias present few symptoms and usually require no treatment. Occasionally, the patient will complain of an aching or cramping of the leg muscles or a vague pain along the shin bone. The usual site is the middle third of the leg, somewhat to the lateral side of the anteror border of the tibia. The hernias have been classified by Ihde, who has done much of the original work on this condition, as (1) traumatic, or direct, and (2) constitutional, or indirect. The constitutional, or indirect, type, which is the commonest, is found mostly in asthenic persons of athletic type and has been regarded as part of a generalized mesodermal insufficiency. Although these tumors are not often recognized and are not described in standard textbooks, they seem to occur frequently, especially in active, young athletic males. They arise probably in much the same way as does the oblique inguinal hernia but through congenital defects in the tibialis anticus sheath, through which small veins, arteries or cutaneous nerves normally emerge from the deep muscular compartment. They are usually rounded or oval, and their margins are well defined. On palpation these tumors are soft and easily reducible. At the base of each, a defect in the tibialis anticus muscle sheath can easily be felt. The differentiation between muscle hernias and varicosities is most often confusing. Other disorders to be differentiated are localized varicose veins, lipomas, angiomas, hematomas and other soft tumors. Fascial tumor should not be confused with muscle rupture, in which case the muscle fibers are torn and the sheath remains intact. The diagnosis is usually not difficult, although roentgenographic examination with soft tissue technic is helpful in the differentiation. Failure to aspirate blood from the fascial hernia helps further to distinguish it from a small vascular lesion.

TESTOSTERONE PROPIONATE AS A NITROGEN-SPARING AGENT AFTER SPINAL CORD INJURY

Irving S. Cooper, M.D.
Edward H. Rynearson, M.D.
Collin S. MacCarty, M.D.
and
Marschelle H. Power, Ph.D., Rochester, Minn.

One of the most difficult problems in the management of severe injuries to the spinal cord is the maintenance of adequate nutritional status. Depletion of protein associated with rapid decrease in the value for serum proteins, precipitous loss of weight and early development of decubitus ulcers are especially severe,[1] and control has been very difficult. Forced feedings and parental administration of plasma, whole blood or amino acids have not been universally successful in the solution of this problem. The present report considers the possible usefulness of testosterone propionate as an anticatabolic or nitrogen-sparing agent in patients who are paraplegic after trauma to the spinal cord and includes observations on the excretion of nitrogen and the development of decubitus ulcers.

MATERIAL AND METHODS

The catabolic effect of trauma to the spinal cord was studied in a control group of 15 patients. For the purpose of this report, these patients were divided into three categories based on the interval that elapsed from the time of injury until the time the patient was brought under our observation. These arbitrary categories were (1) patients with acute illness examined within two

3. Saunders, J. B. deC. M.: Personal communication to the authors.

4. Schmier, A. A.: Fascial Hernia of Both Lower Extremities: Injection with Sodium Morrhuate, J. A. M. A. **109**: 28 (July 3) 1937.

Fellow in Neurosurgery, Mayo Foundation (Dr. Cooper).

From the Division of Medicine (Dr. Rynearson); from the Section on Neurologic Surgery, Mayo Clinic (Dr. MacCarty), and from the Division of Biochemistry, Mayo Foundation (Dr. Power).

1. Munro, D.: Rehabilitation of Veterans Paralyzed as Result of Injury to Spinal Cord and Cauda Equina, Am. J. Surg. **75**: 3-18 (Jan.) 1948. Matson, D. D.: The Treatment of Acute Compound Injuries of the Spinal Cord Due to Missiles, Springfield, Ill., Charles C Thomas, Publisher, 1948. Freeman, L. W.: Treatment of Paraplegia Resulting from Trauma to the Spinal Cord, J. A. M. A. **140**: 949-958 (July 16) 1949. Cooper, I. S., and Hoen, T. I.: The Treatment of Decubitus Ulcers with Fibrin Foam: A Preliminary Report, Mil. Surgeon **102**: 55-60 (Jan.) 1948.

weeks after injury, (2) patients with postacute illness first examined two weeks to six months after injury and (3) chronically ill patients examined six months or longer after the original incurrence of a lesion of the spinal cord. The degree of protein loss was determined principally by studies of nitrogen balance and serial determinations of serum protein. The general nutritional status of each patient and the development of decubitus ulcers, when present, were carefully noted. The metabolic variations noted in this group have been discussed in detail elsewhere [2] and are referred to in this report only as they concern the immediate purpose of this study.

A second group of 15 patients was studied after injury to the spinal cord. Each patient received the same treatment afforded those in the control group except for the additional measure of the administration of testosterone propionate [3] in varying dosages. The dosage most frequently used was 50 or 100 mg.

Data Related to Protein Metabolism of Five Control and Five Treated Patients

	Average Urinary Nitrogen, Gm./ 24 Hr.	Average Nitrogen Balance, Gm./ 24 Hr.	Average Urinary Creatine Nitrogen, Mg./ 24 Hr.	Average Value for Serum Protein at Stated Intervals After Injury, Gm./100 Cc.		Development of Decubitus Ulcer in Acute Period, % of Patients
				7th Day	14th Day	
Control*	21.1	−14.1	290	5.5	5.2	60
Treated†	12.8	−4.0	169	5.8	6.0	0

* The five control patients did not receive testosterone propionate.
† The five treated patients received testosterone propionate for the first 14 days after injury to the spinal cord.

a day administered intramuscularly. Studies of nitrogen balance and serial determinations of serum protein were made, and the nutritional status and the occurrence of decubitus ulcers, when present, were noted. The treated patients also were grouped according to whether their condition was acute, postacute or chronic as described for the controls. Protein and caloric intake in both the control group and the treated group was not rigidly regulated but was determined by the individual's ability to eat. However, accurate records of protein and caloric intake were maintained in each case.

RESULTS

Protein Metabolism After Injury to the Spinal Cord in Control Group of Patients.—The Acute Period: In five patients severe injury to the spinal cord resulted in the catabolism of body protein, which was reflected in the excretion of large amounts of nitrogen in the urine. In the control group the urinary nitrogen amounted to as much as 22 to 29 Gm. a day for the first two to four weeks after injury, the peak excretion being reached during the third to sixth days. Nitrogen intake during this acute period varied from 0 to 12 Gm. a day. Although the distribution of nitrogen in the urine was essentially normal, the creatine nitrogen was disproportionately increased and sometimes amounted to as much as 500 mg. a day. The quantity of urinary nitrogen appeared to be directly proportional to the severity of the injury to the spinal cord, and concussion of the cord was not observed to produce a pronounced catabolic response. The concentration of protein in the serum decreased in seven to 14 days after injury to 4.6 to 5.7 Gm. per 100 cc. (normal values 6.4 to 7.6 Gm. per 100 cc.). Reports of two representative cases follow.

Case 1.—A 68 year old carpenter sustained a fracture dislocation in the cervical part of the spinal column, with immediate complete quadriplegia below the fifth cervical segment, when he fell 9 feet from a scaffold. Seven days after injury the serum proteins measured 5 Gm. per 100 cc. During this week the amount of nitrogen excreted in the urine averaged 24 Gm. and reached 29 Gm. on the fifth day after injury. There was a negative nitrogen balance of 20 to 25 Gm. daily during this week, and the value for urinary creatine nitrogen averaged 355 mg. a day. A sacral decubitus ulcer developed on the ninth day after injury.

Case 2.—A 46 year old farmer fell 7 feet from a hayloft, incurring a fracture dislocation of the sixth cervical vertebra, and had immediate paralysis below the seventh cervical vertebra. During the first eight days after injury the value for urinary nitrogen averaged 22 Gm. per 24 hours, and there was a negative nitrogen balance of 15.99 Gm. a day. The amount of creatine nitrogen excreted in the urine during this period varied from 219 to 389 mg. a day. On the seventh day after injury the value for serum protein was 5.6 Gm. per 100 cc., with an albumin-globulin ratio of 1.9 to 1.0.

Significant data concerning protein metabolism in five control patients during the acute post-traumatic period are tabulated in the table.

The Postacute Period: The average daily excretion of urinary nitrogen during the second through fifth weeks amounted to 16.5 Gm., with an average negative nitrogen balance of 4 to 6 Gm. per 24 hours. During the ensuing months a normal nitrogen balance usually developed, and in two patients a decidedly positive nitrogen balance (4 to 7 Gm. positive balance a day) was observed during the third and fifth months after injury, respectively. Creatine nitrogen was excreted in amounts up to 100 mg. a day throughout the postacute period, and the concentration of protein in the serum usually continued in the hypoproteinemic range.

The Chronic Period: In most instances a positive nitrogen balance was established before the sixth month after injury. The patients in whom a normal or positive nitrogen balance did not develop entered a stage of chronic debilitation almost invariably complicated by intractable decubitus ulcers and evidence of protein depletion.

Protein Metabolism After Injury to the Spinal Cord in Patients Receiving Testosterone Propionate.—Protein catabolism was significantly less pronounced in those patients receiving testosterone propionate than in the control group. In the acute, postacute and chronic periods, the administration of testosterone propionate was associated with a decreased excretion of nitrogen in the urine and either a decrease in the degree of negative nitrogen balance or development of a positive balance. In three of the five control patients observed during the acute period, a decubitus ulcer developed within two weeks after injury, but in none of the five patients receiving testosterone propionate

2. Cooper, I. S.; Rynearson, E. H.; MacCarty, C. S., and Power, M. H.: Metabolic Consequences of Spinal Cord Injury, J. Clin. Endocrinol. **10**: 858-870 (Aug.) 1950.
3. The testosterone propionate used in this investigation was supplied to one of us (I. S. C.) by Dr. Edward Henderson of Schering Corporation.

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during the acute post-traumatic period did a decubitus ulcer develop. The general nutritional status of those patients receiving testosterone propionate was considerably better than that of those who did not receive this drug.

The Acute Period: The amount of nitrogen excreted in the urine in this group of patients varied from 8 to 21 Gm. a day for the first two to four weeks. Nitrogen intake during the acute period varied from 0 to 12 Gm. a day, an amount about equal to that of the control group. The distribution of nitrogen in the urine was essentially normal, with urea forming approximately 80 per cent of the total. The average amount of creatine nitrogen excreted was decreased in the patients receiving testosterone propionate and varied from 15 to 500 mg. a day. Although the concentration of serum proteins tended to decrease, the lowest value recorded in this group of patients was 5.8 Gm. per 100 cc. Moreover, the serum protein level tended to return to the normal range within four to six weeks after injury in the group of treated patients. Reports of the five patients who received testosterone propionate during the acute period follow.

CASE 3.—A 16 year old white boy became paraplegic below the level of the umbilicus when he fell 8 feet from a tree. He was admitted to the hospital immediately after the injury. The intramuscular administration of 25 mg. of testosterone propionate was started the day of admission, and this was increased to 50 mg. on the third day after injury. During the first seven days after injury the average daily loss of urinary nitrogen was 12.5 Gm. The average daily intake of nitrogen during this period amounted to 7.0 Gm. During the following three weeks the average value for urinary nitrogen was 7.3 Gm., while the average nitrogen intake amounted to 10 Gm. The average value for creatine nitrogen during the first week was 292 mg., while the average value for urinary creatine nitrogen during the ensuing three weeks was 80 mg. The lowest value recorded for serum proteins was 5.9 Gm. per 100 cc. on the eighth day after injury. The level of serum proteins rose by the fourth week after injury to 6.5 Gm.

CASE 4.—A 14 year old schoolboy became paraplegic below the level of the second lumbar vertebra immediately after an injury received in an automobile accident. He was admitted to our service 10 days after injury, and for the ensuing week he had an average negative nitrogen balance of 2.5 Gm. a day. On the eighth day after admission, the intramuscular administration of 25 mg. of testosterone propionate a day was instituted. The average daily nitrogen balance during the eighth through fifteenth days after admission was + 4.4 Gm. Although the amount of preformed creatinine nitrogen excreted during the period of testosterone propionate administration was the same as that during the first week of admission, the average amount of urinary creatine nitrogen fell from 218 mg. to 47 mg. a day. On the day of admission, the serum protein level was 5.4 Gm. per 100 cc. This rose to 5.9 Gm. by the fifteenth day after admission.

This patient continued to receive testosterone propionate at the rate of 25 mg. per day intramuscularly from the eighth to the sixty-fourth day after admission. During this period he gained 12 pounds (5.4 Kg.). There was no decubitus ulcer formation at any time, although the neurological status remained essentially unchanged.

CASE 5.—An 18 year old girl was rendered paraplegic below the eleventh thoracic myotome by a gunshot injury of the spinal cord. She was admitted within eight hours after injury, and the intramuscular administration of testosterone propionate at the rate of 50 mg. a day was instituted the day of admission. Because of her refusal to take food, the nitrogen intake during the first seven days after admission averaged only 5.4 Gm. per day. The nitrogen loss during this time averaged 13.8 Gm. a day; the resultant negative nitrogen balance was 8.4 Gm. per day. During the ensuing 14 days, the nitrogen intake averaged 9 Gm. a day, while the average amount of nitrogen excreted was decreased to 8.2 Gm. per 24 hours. The serum protein level on the day of admission was 6.6 Gm. per 100 cc. and did not fall below 6.3 Gm. during our 60 day period of observation of this patient. Three weeks after admission the value for serum protein was 7.4 Gm.

Although there was no improvement in neurological status, there was no occurrence of decubitus ulcers two months after injury. It is worthy of note that this patient received 50 mg. of testosterone propionate daily for 38 days without evidence of acne, hirsutism or deepening of the voice. Seventy days after injury and 32 days after cessation of testosterone propionate therapy, the patient noted resumption of menses.

CASE 6.—A 26 year old barber became paraplegic below the fourth thoracic segment immediately after receiving a gunshot wound of the spinal column. He was admitted to our service 18 hours after injury, and the intramuscular administration of 100 mg. of testosterone propionate a day was instituted. During the first seven days after injury the average loss of urinary nitrogen was 17.5 Gm. This fell during the next seven days to 14.0 Gm. per 24 hours. There was an average negative nitrogen balance of 9.5 Gm. a day during the first week after injury. However, during the seventh through the fourteenth days after injury there was an average positive nitrogen balance of 0.8 Gm. The value for urinary creatine nitrogen averaged 70.0 mg. per 24 hours during the acute post-traumatic period. The serum protein level was 5.6 Gm. per 100 cc. on the seventh post-traumatic day and 5.9 Gm. on the fourteenth post-traumatic day. Neurological function below the fourth thoracic segment had not returned during the six weeks the patient was under our observation. However, there was no loss of weight or formation of decubitus ulcers during this time.

CASE 7.—A 40 year old construction laborer fell 12 feet, landing on his buttocks, and incurred immediate paraplegia below the level of the twelfth thoracic myotome. The intramuscular administration of 100 mg. of testosterone propionate a day was commenced on the day of injury. During the ensuing two weeks the average loss of urinary nitrogen was 17.0 Gm. a day, with an average daily negative nitrogen balance of 6.0 Gm. The peak excretion amounted to 22.8 Gm. of urinary nitrogen in 24 hours on the sixth day after injury. This was the highest value for nitrogen excretion in 24 hours that was noted in any of the patients who received testosterone propionate during this study. There was an average daily excretion of 233 mg. of creatine nitrogen during the acute post-traumatic period. The serum proteins on the day of admission measured 6.8 Gm. per 100 cc. On the fourteenth day after admission the value for serum proteins was 6.1 Gm. This patient did not have any decubitus ulcers during his stay of 60 days in the hospital, nor did he demonstrate any degree of neurological recovery.

Significant data concerning the protein metabolism in the five patients who received testosterone propionate during the acute post-traumatic period are tabulated in the table.

The Postacute Period: The average daily excretion of urinary nitrogen during the second through the fifth weeks measured 12.0 Gm., with an average positive nitrogen balance of 3.0 Gm. per 24 hours. In those patients in whom testosterone propionate administration was started more than two weeks after injury, the improvement in the status of nitrogen balance was invariably greater than that which we had previously, in an earlier study,[2] noted to occur spontaneously.

The Chronic Period: In those patients who had spontaneously achieved a positive nitrogen balance, the administration of testosterone propionate failed to increase nitrogen retention. In debilitated patients who were in negative nitrogen balance, the intramuscu-

lar administration of testosterone propionate in doses of 50 to 100 mg. a day coincided with mitigation of the negative nitrogen balance in every instance.

COMMENT

Metabolic Abnormalities in Paraplegics.—The investigation reported in this paper was undertaken because of the nature of the metabolic changes that have recently been observed in some patients after injury to the spinal cord. A demasculinizing effect of injury to the spinal cord in males was suggested by the not infrequent occurrence of gynecomastia in paraplegic men.[4] Further evidence of demasculinization in paraplegic men is the frequent occurrence of testicular atrophy,[5] prostatic atrophy [5c] and sterility.[6]

Abnormal metabolism of calcium also has been reported in paraplegic men, particularly in the presence of infection,[7] and a peculiar type of neurogenic ossifying fibrositis, as well as spondylitis and other pathological ossification and calcification, have been reported to be associated with injury to the spinal cord.[8] Abramson and Kamberg [8] attributed the pathological calcifications in paraplegics to circulatory changes in bone, bony atrophy and loss of body protein.

The demasculinizing syndrome observed in paraplegic men suggested that testosterone propionate might be of some value in the over-all treatment of such patients. Moreover, the known anticatabolic properties of testosterone propionate further prompted the investigative use of this substance after injury to the spinal cord.

Anticatabolic Properties of Testosterone.—Hoen [9] and others [10] have noted some evidence of decrease in the post-traumatic catabolic reaction after the use of anterior pituitary extract. Testosterone compounds, however, have been more widely employed as nitrogen-retaining agents, and the anticatabolic properties of this hormone are well documented.[11] The report of Reifenstein and Albright [11f] concerning the use of steroid hormones in osteoporosis is particularly germane to our study. These authors reported that in addition to the nitrogen-retaining properties of testosterone propionate, this hormone also prevents osteoporosis and disuse atrophy of bone. The advantages of preventing decalcification of bone in paraplegics, who are particularly predisposed to pathological calcifications of soft tissues and to urinary calculi, are readily apparent.

The investigations of Gardner [12] and Halvorsen [13] also are related to our study. These investigators reported that the steroid hormones mitigate osseous atrophy in the bones of the extremities that have been experimentally denervated by section of peripheral nerves or hemisection of the spinal cord. Nadler and his associates [14] reported the use of testosterone propionate in patients with dystrophia myotonica who demonstrated gynecomastia and hypogonadism and stated that in one of their patients testosterone propionate seemed to promote healing of a digital amputation wound. It is readily apparent that retention of nitrogen, prevention of bony disuse atrophy and promotion of wound healing, all of which have been reported as properties of testosterone compounds, are extremely desirable aims in the treatment of patients who have sustained injury to the spinal cord. These reports further encouraged us to investigate the use of testosterone propionate in paraplegic patients. Moreover, since the parenteral administration of large amounts of protein during the immediate post-traumatic period tends to prolong the protein catabolic reaction, the need for an anticatabolic agent is readily apparent.[15]

Observations of Present Investigation.—We have found, as have Abels, Young and Taylor,[11a] that testosterone propionate will initially result in a relative hypoproteinemia despite the fact that nitrogen is retained. This apparently indicates that tissue protein is spared at the expense of serum proteins. In view of the pronounced breakdown of body tissues after trauma to the spinal cord [2] as well as after other types of trauma,[16] tissue fabrication is highly desirable in paraplegic patients. The initial hypoproteinemia was reversible in our patients in 30 to 60 days. Approximately 50 per cent of the patients in this study who received testosterone propionate reported a feeling of well-being and increased appetite during the period of testosterone propionate administration.

4. Bors, E.: Spinal Cord Injuries, TB10-503, Veterans Administration Technical Bulletin (Dec. 15) 1948. Cooper, I. S., and Hoen, T. I.: Gynecomastia in Paraplegic Males: Report of 7 Cases, J. Clin. Endocrinol. **9**: 457-461 (May) 1949.

5. (*a*) Cooper, Rynearson, MacCarty and Power.[3] (*b*) Stemmermann, G. N.; Weiss, L.; Auerbach, O., and Friedman, M.: A Study of the Germinal Epithelium in Male Paraplegics, Am. J. Clin. Path. **20**: 24-34 (Jan.) 1950. (*c*) Cooper, I. S.; MacCarty, C. S.; Rynearson, E. H., and Bennett, W. A.: Metabolic Consequences of Spinal Cordectomy, Proc. Staff Meet., Mayo Clin. **24**: 620-627 (Dec. 7) 1949. (*d*) Bors, E.; Engle, E. T.; Rosenquist, R. C., and Holliger, V. H.: Fertility in Paraplegic Males: A Preliminary Report of Endocrine Studies, J. Clin. Endocrinol. **10**: 381-398 (April) 1950.

6. Munro, D.; Horne, H. W., Jr., and Paull, D. P.: The Effect of Injury to the Spinal Cord and Cauda Equina on the Sexual Potency of Men, New England J. Med. **239**: 903-911 (Dec. 9) 1948.

7. Freeman, L. W.: The Metabolism of Calcium in Patients with Spinal Cord Injuries, Ann. Surg. **129**: 177-184 (Feb.) 1949.

8. Abramson, D. J., and Kamberg, S.: Spondylitis, Pathological Ossification, and Calcification Associated with Spinal-Cord Injury, J. Bone & Joint Surg. **31-A**: 275-283 (April) 1949.

9. Hoen, T. I.: Personal communication to the authors.

10. Cuthbertson, D. P.; Webster, T. A., and Young, F. G.: The Anterior Pituitary Gland and Protein Metabolism: I. Nitrogen-Retaining Action of Anterior Lobe Extracts, J. Endocrinol. **2**: 459-467 (Sept.) 1941.

11. (*a*) Abels, J. C.; Young, N. F., and Taylor, H. C., Jr.: Effects of Testosterone and of Testosterone Propionate on Protein Formation in Man, J. Clin. Endocrinol. **4**: 198-201 (May) 1944. (*b*) Johnston, J. A.: Factors Influencing Retention of Nitrogen and Calcium in Period of Growth: VII. Effect of Methyl Testosterone, Am. J. Dis. Child. **74**: 52-57 (July) 1947. (*c*) Kochakian, C. D.: Protein Anabolism and Its Mechanism: A Review, in Reifenstein, E. C., Jr., and Adams, H.: Conference on Metabolic Aspects of Convalescence: Transactions of the Sixteenth Meeting, New York, Josiah Macy, Jr., Foundation, 1947, pp. 79-119. (*d*) Kinsell, L. W.; Hertz, S., and Reifenstein, E. C., Jr.: Effect of Testosterone Compounds upon Nitrogen Balance and Creatine Excretion in Patients with Thyrotoxicosis, J. Clin. Investigation **23**: 880-890 (Nov.) 1944. (*e*) Meyer, F. L.; Hirshfeld, J. W., and Abbott, W. E.: Metabolic Alterations Following Thermal Burns: VII. Effect of Force-feeding, Methionine, and Testosterone Propionate on Nitrogen Balance in Experimental Burns, J. Clin. Investigation **26**: 796-801 (July) 1947. (*f*) Reifenstein, E. C., Jr., and Albright, F.: The Metabolic Effects of Steroid Hormones in Osteoporosis, J. Clin. Investigation **26**: 24-56 (Jan.) 1947.

12. Gardner, W. U., cited by Urist, R.; Budy, A. M., and McLean, F. C.: Factors Influencing the Reaction of the Mammalian Skeleton to Estrogens, in Reifenstein, E. C., Jr., and Adams, H.: Conference on Metabolic Aspects of Convalescence: Transactions of the Seventeenth Meeting, New York, Josiah Macy, Jr., Foundation, 1948, pp. 79-105.

13. Halvorsen, D. K.: Effect of Steroid Hormones on Denervated Extremities, in Reifenstein, E. C., Jr., and Adams, H.: Conference on Metabolic Interrelations, New York, Josiah Macy, Jr., Foundation, 1949, pp. 172-180.

14. Nadler, C. S.; Steiger, W. A.; Troncelleti, M., and Durant, T. M.: Dystrophia Myotonica, with Special Reference to Endocrine Function (Klinefelter's Syndrome), J. Clin. Endocrinol. **10**: 630-636 (June) 1950.

15. Howard, J. E.: Protein Metabolism During Convalescence After Trauma: Recent Studies, Arch. Surg. **50**: 166-170 (March) 1945.

16. Howard.[15] Braasch, J. W.: Collective Review: Protein Metabolic Response to Trauma, Surg., Gynec. & Obst. **88**: 473-483 (June) 1949.

The present study was of too short duration for any evaluation of the effect of testosterone propionate on disuse atrophy of bone in paraplegic patients. The possible lessening of decalcification of bone in such patients by the use of steroid compounds deserves further study. No abnormality of the levels of calcium, potassium, sodium or chlorides in the serum was observed during the period of administration of testosterone propionate in any of these patients.

A comparison of the data related to protein metabolism in the first 14 days after spinal cord injury in the control group with those in the patients who received testosterone propionate reveals a significant difference between the two groups (table). The absolute urinary excretion of nitrogen was 39 per cent less in the treated group, while the urinary excretion of creatine was 42 per cent less in the patients who received testosterone propionate. The nitrogen balance, level of serum proteins and incidence of formation of decubitus ulcers were all more favorable in the patients who received testosterone than in those who did not receive this drug.

SUMMARY AND CONCLUSIONS

The investigative use of testosterone propionate as an anticatabolic agent after injury to the spinal cord is reported. The 15 patients who received testosterone propionate after severe trauma to the spinal cord demonstrated considerably less urinary excretion of nitrogen and creatine, a more favorable status of nitrogen balance, less pronounced hypoproteinemia and a lower incidence of decubitus ulcer formation than did a control group of 15 patients who did not receive the drug. Further investigative use of testosterone compounds as anticatabolic agents in paraplegic patients is warranted. The effect of such compounds on the disuse atrophy of bone, pathological calcification of soft tissues and incidence of urinary calculi in paraplegics should be evaluated.

The Jeffries Aeronautical Award.—In November, 1784, Dr. John Jeffries, a native of Boston . . . took his first ride in a hydrogen-filled balloon to an altitude of over 6,000 feet with Jean-Pierre Blanchard, renowned French balloonist (the first to make a balloon ascent in the United States, June 9, 1793). During this flight, Dr. Jeffries dropped a written message to a friend, Mr. Arodi Thayer, and it is now in the Snell Museum of Physics at Amherst College. It became what may be called the first piece of mail to be carried by air. Dr. Jeffries was so intrigued by the fascinating experience that he immediately explored the possibility of flying across the English channel. After careful planning by him and Blanchard, they made a successful flight from Dover, England, to Calais, France, on January 7, 1785. . . . Dr. John Jeffries was the first American physician to participate actively in aeronautics for medical scientific purposes. He wrote a book in 1786, describing his experiences in both balloon flights. It is called "A Narrative of the Two Aerial Voyages." His place in aviation medicine and his memory is perpetuated by the annual award to the physician in the United States who makes the greatest contribution in the field of aviation medicine—the John Jeffries Award of the Institute of the Aeronautical Sciences.—Francis N. Kimball, M.D., The Progress of Aviation Medicine During the Past Half Century, *New York State Journal of Medicine*, Jan. 1, 1951.

TERRAMYCIN, CHLORAMPHENICOL AND AUREOMYCIN IN ACUTE BRUCELLOSIS

A PRELIMINARY REPORT

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Until the advent of the antibiotics, the therapy of brucellosis was viewed with defeatism.[1] The introduction of the sulfonamides and subsequently of penicillin engendered hopes for the control of this protean disease.[2] However, it was soon found that these agents were only moderately effective in controlling the acute symptoms and were ineffective as curative agents. The use of streptomycin alone, or combined with a sulfonamide, gave the first genuine promise of effective treatment.[3] Immediate clinical response was good, and relapses were significantly reduced. Toxicity, however, was serious.

Subsequent studies with aureomycin,[4] and chloramphenicol,[5] indicated even more rapid response and relatively negligible toxic manifestations. Reported relapse rates ranged up to 22 per cent. In a more recent study of the use of chloramphenicol in brucellosis, Knight and his associates [6] reported six relapses in a series of 13 patients.

When terramycin hydrochloride became available, in vitro tests at this institution demonstrated that it

From the United States Naval Medical Research Unit No. 3.

These studies were made possible by the cooperation of the Egyptian Ministry of Health.

Terramycin hydrochloride was supplied by Chas. Pfizer & Company, Inc., Brooklyn, N. Y.

This article has been released for publication by the Division of Publications of the United States Navy. The opinions and views set forth are those of the writers and are not to be construed as reflecting the policies of the Navy Department.

1. Evans, A. C.: Brucellosis (Undulant Fever), Miscellaneous Publication 34, Federal Security Agency, U. S. Public Health Service, Washington, D. C., Government Printing Office, 1945.

2. Harris, H. J.: Brucellosis (Undulant Fever): Clinical and Subclinical, ed. 2, New York, Paul B. Hoeber, Inc., 1950.

3. (*a*) Harris.[2] (*b*) Molinelli, E. A.; Ithurralde, D.; Miyara, S.; Speroni, A.; Vital, V. C.; Cabassi, E., and Pandolfo, G.: Recent Developments in the Therapy of Human Brucellosis, Puerto Rico J. Pub. Health & Trop. Med. **25**: 29, 1949. (*c*) Spink, W. W.; Hall, W. H.; Shaffer, J., and Braude, A. I.: Treatment of Brucellosis with Streptomycin and a Sulfonamide Drug, J. A. M. A. **139**: 352 (Feb. 5) 1949. (*d*) Braude, A. I.; Hall, W. H., and Spink, W. W.: Aureomycin Therapy in Human Brucellosis Due to Brucella Abortus, ibid. **141**: 831 (Nov. 19) 1949.

4. (*a*) Harris.[2] (*b*) Braude.[3d] (*c*) Bryer, M. S.; Schoenbach, E. B.; Wood, R. H., and Long, P. H.: The Treatment of Acute Brucellosis with Aureomycin, Bull. Johns Hopkins Hosp. **84**: 444, 1949. (*d*) Spink, W. W.; Braude, A. I.; Castaneda, M. R., and Silva-Goytia, R.: Aureomycin Therapy in Human Brucellosis Due to Brucella Melitensis, J. A. M. A. **138**: 1145 (Dec. 18) 1948. (*e*) Harris, H. J.: Aureomycin and Chloromycetin in Brucellosis, Bull. New York Acad. Med. **25**: 458, 1949; (*f*) Aureomycin and Chloramphenicol in Brucellosis with Special Reference to Side Effects, J. A. M. A. **142**: 161 (Jan. 21) 1950. (*g*) Ralston, R. J., and Payne, E. H.: Treatment of Chronic Brucellosis with Chloramphenicol and Aureomycin, ibid. **142**: 159 (Jan. 21) 1950. (*h*) Woodward, T. E.: Chloromycetin and Aureomycin: Therapeutic Results, Ann. Int. Med. **31**: 53, 1949. (*i*) Galpine, J. F.: A Case of Abortus Infection Treated with "Aureomycin," Brit. M. J. **1**: 1037, 1949. (*j*) Rose, H. M., and Kneeland, Y., Jr.: Aureomycin in the Treatment of Infectious Diseases, Am. J. Med. **7**: 532, 1949.

5. (*a*) Harris, footnotes 2, 4*e* and 4*f*. (*b*) Ralston,[4g] (*c*) Woodward,[4h] (*d*) Walley, J. F. L., and Cooper, T. V.: A Case of Undulant Fever Treated by Chloramphenicol, Brit. M. J. **2**: 265, 1949. (*e*) Woodward, T. E.; Smadel, J. E.; Holbrook, W. A., Jr., and Raby, W. T.: Symposium on Antibiotics: The Beneficial Effect of Chloromycetin in Brucellosis, J. Clin. Investigation **28**: 968, 1949.

6. Knight, V.; Ruiz-Sanchez, F., and McDermott, W.: Chloramphenicol in the Treatment of Acute Manifestations of Brucellosis, Am. J. M. Sc. **219**: 627, 1950.

compared favorably with aureomycin and chloramphenicol in its action against Brucella melitensis. As a consequence, it was decided to test the clinical effectiveness of terramycin in acute brucellosis as compared with aureomycin and chloramphenicol. This paper is a preliminary report of the results, showing that terramycin is excellent in alleviating the clinical signs and symptoms of the acute disease and that it is as effective as are the drugs with which it is compared in preventing relapses.

METHOD OF STUDY

Clinical Material.—Thirty-nine patients with acute brucellosis have been treated. All were males, ranging from 17 to 50 years of age. The selection of cases was by means of Brucella agglutinations in dilutions of 1: 160 or above in acutely ill, febrile patients. None had received previous antibiotic therapy. The duration of illness before treatment ranged from 11 to 185 days, with an average of 42 days. The rectal temperatures before specific treatment varied from 100.2 to 105.8 F., with the majority in the higher portion of this range.

Diagnostic Criteria.—Brucella agglutinations in this series ranged in titer from 1: 160 to 1: 10,240. Blood and urine for culture were taken daily from all patients before the institution of therapy. Brucella organisms were cultured from the blood of 36 of the 39 patients; from 33, Br. melitensis was isolated. The organisms isolated from the other three patients have not yet been identified definitely as to the species of Brucella. Urine cultures were positive for Brucella in 16 cases. Of the three patients with neither blood nor urine cultures positive for Brucella, one had an agglutination titer of 1: 320; the other two had titers of 1: 2,560.

Observations.—Serial blood and urine cultures for Brucella as well as routine laboratory procedures were carried out on all patients before, during and after the course of antibiotic therapy. All patients were observed in the ward for a period of three weeks after the completion of treatment. If the patients remained afebrile and asymptomatic and their blood and urine cultures remained negative for Brucella, they were discharged and observed as outpatients. After discharge, cultures of the patients' blood and urine were checked for Brucella

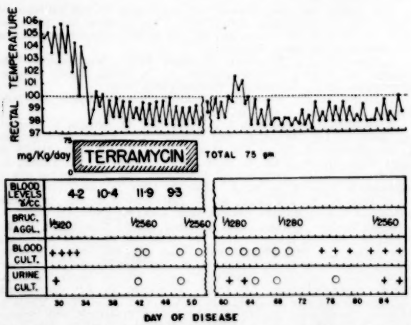

Chart 1.—Rapid response of brucellosis to terramycin and subsequent urinary bacterial relapse associated with a brief self-limited febrile episode in a 25 year old man. Later, patient remained afebrile during a bacterial relapse in both blood and urine. Similar responses were observed in patients treated with chloramphenicol and aureomycin.

at intervals of from one to four weeks, and interval histories, physical examinations and routine laboratory examinations were continued. Those patients who had either clinical or bacteriologic relapse were re-treated and observed for an additional three weeks before discharge. All the patients reported have been observed for from one to six months since the completion of their first course of therapy.

Case Selection.—The patients were divided into three groups. The first 12 patients admitted were given chloramphenicol; the second 11 patients, aureomycin, and the remaining 16 patients, terramycin.

Clinically, there was no detectable difference in the severity of illness in the three groups studied. The majority of the patients in all groups had been ill between one and two months before treatment, the average for the terramycin group being 52 days; for the chloramphenicol group, 37 days, and for the aureomycin group, 33 days.

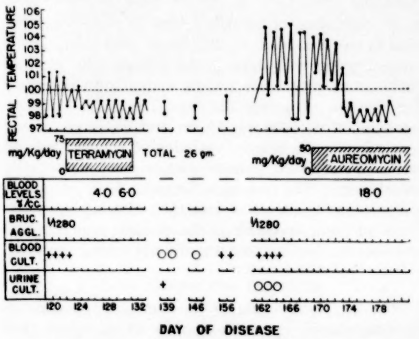

Chart 2.—Response of brucellosis to terramycin in a 47 year old man, followed by both urinary and blood bacterial relapses at different times, neither accompanied by clinical manifestations. Later, a severe clinical relapse with bacteremia developed.

Dosage.—The daily dosage of antibiotic for all groups was calculated on a body weight basis. The doses of chloramphenicol and aureomycin were 50 mg. per kilogram a day administered orally every three hours. The first 15 patients treated with terramycin were given 75 mg. per kilogram a day; the last patient received 100 mg. per kilogram a day. Terramycin was administered orally every four hours.

Treatment was continued in all cases for seven to 14 days after the patients became afebrile. The first 15 patients in the terramycin group received an average of 44 Gm. over an average period of 11.2 days. The last patient in the terramycin group received 62 Gm. in 13.5 days. The patients in the chloramphenicol and aureomycin groups received averages of 36 and 35 Gm. over average periods of 12.4 and 12.8 days, respectively.

RESULTS

Response to Therapy.—Typical patient responses to terramycin are illustrated in charts 1 and 2. Terramycin was found to be fully as effective in controlling the fever and the acute symptoms as were chloramphenicol and aureomycin (table 1). The patients became afebrile within an average of 3.4 days after institution of therapy in the terramycin-treated group, as compared with averages of 5.1 and 4.8 days in the chloramphenicol and aureomycin groups, respectively. Symptoms such as arthritis, arthralgia, headache and asthenia disappeared more slowly than the fever in all groups.

Relapses.—Of the 39 patients treated in this series, 27 (69 per cent) have had at least one relapse after the completion of therapy (table 2). Eighteen of the 39 (46 per cent) had clinical relapses, and, of these, 12 had an associated Brucella bacteremia. The remaining nine (23 per cent) had bacterial relapses without clinical signs or symptoms.

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Twenty of the 27 relapses (74 per cent) occurred during the second and third weeks after completion of therapy. Of the remaining seven, four occurred during the first week and the other three between four and 10 weeks after treatment. The average interval from the completion of therapy to the onset of relapse was 16 days.

Of the total of 27 patients with relapses, 16 have been re-treated with one or another of the antibiotics under investigation, in most cases with larger doses over longer periods. Immediate clinical response in all was again excellent. Five (31 per cent) of the patients have had relapses after the second course of therapy.

Side Effects.—No serious toxic effects were noted in any of the groups. Neither were there minor toxic effects detected in the patients treated with terramycin or chloramphenicol. However, of the 11 patients treated with aureomycin, three complained of anorexia, nausea and occasional episodes of vomiting. In a fourth, drug fever developed. In none of the patients did these minor toxic symptoms necessitate discontinuation of treatment.

Since completion of this preliminary report, several patients not included in this series have been given larger doses of terramycin and chloramphenicol, at the rate of 100 mg. per kilogram of body weight a day. On this increased dosage, terramycin still has had relatively few toxic effects, but most of the patients on the increased dosage of chloramphenicol have complained of burning of the tongue, with various degrees of glossitis and commissural cheilitis. These and additional cases will be reported in detail in a later paper.

COMMENT

Terramycin has produced excellent clinical responses in the 16 cases of acute brucellosis reported in this study. Although its exact position relative to chloramphenicol and aureomycin has not been determined definitely, the indications are that terramycin ranks equally well with these drugs with regard to clinical response. All three drugs produced a rapid defervescence in these cases and a slightly less rapid alleviation of other symptoms. Terramycin appeared to shorten the febrile period more than chloramphenicol or aureomycin, but the differences are not statistically significant. As regards toxicity, however, an important difference was observed namely, the frequent occurrence of gastric disturbances with aureomycin. For this reason terramycin and chloramphenicol proved to be definitely more acceptable from the patient's standpoint.

With respect to the important problem of preventing relapses, terramycin does not appear to be superior to the other two compounds. All the relapse rates found in this study are higher than those previously reported by other investigators. Probably several factors are involved. A large proportion of the patients were in a relatively early, acute, septicemic phase of the disease, and relapses in such a group might well be expected to be more frequent than in a chronically infected group. Another factor may be that all the patients were observed in the hospital for at least three weeks after the completion of treatment. However, as high as the relapse rates have been to date, it is to be emphasized that even higher rates are probable as the follow-up period lengthens.

Of particular interest with regard to the relapse rate is the high incidence of bacteriologic relapses in patients in whom physical examination and questioning presented no signs or symptoms of illness. Such patients accounted for a third of the relapses reported in this study. This emphasizes the value of repeated blood and urine cultures at the conclusion of therapy even in the absence of clinical findings. The procedure in this series has been to re-treat the patients with bacterial relapses, so the question arises as to what proportion of these untreated patients would have subsequently manifested the disease clinically or would have gone on to spontaneous cure. In the absence of an answer to this, it seems logical to assume that a better chance of cure is offered if the patients are given another course of therapy.

TABLE 1.—*Summary of Cases of Brucellosis*

Drug	Cases	Dosage Mg./Kg./Day	Average Total Dose, Gm.	Average No. of Days of Disease When Treatment Started	Average No. of Days Treated	Average No. of Days of Fever After Start of Treatment
Terramycin	15	75	44	54	11.2	3.4
	1	100	62	24	13.5	
Chloramphenicol	12	50	36	37	12.4	5.1
Aureomycin	11	50	35	33	12.8	4.8

TABLE 2.—*Relapses Following Completion of Therapy*

Drug	No. of Patients	Clinical *		Bacterial †		Total	
		No.	%	No.	%	No.	%
Terramycin	16	8	50	3	19	11	69
Chloramphenicol	12	6	50	2	17	8	66
Aureomycin	11	4	36	4	36	8	73
Total	39	18	46	9	23	27	69

* Clinical relapses with or without bacterial confirmation.
† Bacterial relapses without clinical signs or symptoms.

Now that the acute manifestations of brucellosis are well controlled with antibiotics, the problem of how to reduce the number of relapses assumes primary importance. Two approaches using the compounds now available are suggested. One is that of seeking effective combinations of chemotherapeutic agents with synergistic actions, such as reported by Spink and his co-workers [3c] with streptomycin and a sulfonamide and by Herrel and Barber [7] with dihydrostreptomycin and aureomycin. The other is that of using various dosage levels and prolonging the period of administration. Studies utilizing the latter approach have been initiated at this Naval Medical Research Unit.

SUMMARY AND CONCLUSIONS

Thirty-nine patients acutely ill with brucellosis were treated, 16 with terramycin hydrochloride, 12 with chloramphenicol and 11 with aureomycin.

7. Herrel, W. E., and Barber, T. E.: The Combined Use of Aureomycin and Dihydrostreptomycin in the Treatment of Brucellosis, Proc. Staff Meet., Mayo Clin. 24: 138, 1949.

Clinical response was excellent with each antibiotic, and from this viewpoint there was no observed advantage of any one drug. As regards patient acceptability, terramycin and chloramphenicol were more satisfactory.

There were no significant differences in the clinical or bacterial relapse rates with the three compounds. The high combined clinical-bacterial relapse rate of 69 per cent emphasizes that a satisfactory curative agent or curative routine of administration with the available agents has not been found.

PROSTATIC SMEAR IN CANCER DIAGNOSIS

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The cytological interpretation of the prostatic smear was undertaken for the determination of whether this method of examination can aid in the diagnosis of carcinoma of the prostate. Mulholland [1] in 1931 gave a brief report on the possibility of finding tumor cells in the secretion obtained by prostatic massage. Since then Herbut and Lubin,[2] Albers, McDonald and Thompson,[3] Boyer [4] and Peters [5] reported the presence of cancer cells in the prostatic smear. Other workers [6] in their studies used sediment from urine voided after prostatic massage. The prostatic secretion obtained by massage contains cells from the urethra, the seminal vesicles and the ampullae as well as from the prostate itself. In a previous communication,[5] one of us (H. P.) described in detail the cells found in the prostatic smear. The cellular elements recognized in the stained smear will vary with the physiological and pathological state of the prostate. The normal prostate sheds only a few cells, which are usually single, small columnar cells. In benign prostatic hypertrophy an abundance of cells is shed, singly or in large groups; these columnar cells show a clear regular nucleus and ample cytoplasm. Varying numbers of histiocytes are found in these secretions. If infection is present, the smear will contain dense groups of columnar cells in varying stages of preservation and degeneration mixed with histiocytes, neutrophilic and eosinophilic leukocytes. These smears are at times difficult to interpret, as the dense cell groups may be confused with cancer cells. However, after experience is gained, the differentiation can usually be made. Cells desquamated from a cancer of the prostate are characteristic. The individual cells are usually larger than those shed from prostates not harboring a cancer. They are found in groups or often in large "castlike" structures. Considerable variation in the size of the cancer cells within the same group or cell clusters is noted, whereas columnar cells seen in a normal prostatic smear are uniform. Cell borders of cancer cells are ill defined or unrecognizable as in the "castlike" structures in which the nuclei lie in close approximation. The nuclei are overlapping, crowded and hyperchromatic. Irregular chromatin patches may be distinctly recognizable and multiple or large nucleoli can be seen. At times the nuclei are almost black uniform bodies in which detail is ill defined. The nuclear-cellular ratio is disturbed. A smear containing malignant cells is often characterized by the pleomorphism and variety of the cells. Histiocytes, leukocytes, erythrocytes, columnar cells and spermatozoa will be intermingled in varying numbers with the characteristic cells.

Summary of Clinical and Cytological Observations

Diagnosis	No. of Cases	Prostatic Smear Classification * Class IV and V	Class I and II	Class III
Carcinoma, histologically proved	19	16	2	1
Carcinoma, clinical	25	22	0	3
Carcinoma, total	44	38	2	4
Benign lesions, histologically proved	32	1	31	0
Benign lesions, clinical	70	0	67	3
Benign lesions, total	102	1	98	3
Clinically suspicious of carcinoma	16	4	10	2

* Papanicolaou Classification:
Class I, absence of atypical or abnormal cells (negative).
Class II, atypical cells present but without abnormal features (negative).
Class III, cells with abnormal features but not sufficiently pathognomonic.
Class IV, fair number of cells and cell clusters conclusive for malignancy (positive).
Class V, large number of cells and cell clusters conclusive for malignancy (positive).

METHOD

The prostatic secretions examined in this study were invariably obtained by prostatic massage. It must be emphasized that proper massage is essential to obtain adequate secretion for cytological study. As much of the seminal vesicles and ampullae as possible should be avoided. Yet one should cover the entire gland, beginning at the borders and massaging toward the urethra several times with gentle pressure. Finally, the secretions should be expressed into the urethra by massage of the median groove from base to apex. The secretion obtained in this manner was placed on a clean glass slide on which a thin film of Mayer's albumin had been spread beforehand to insure better adherence of the material to the slide. A second slide

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This study was supported in part with funds from the Dr. Henry C. Buswell Memorial. The cytological investigation was carried out in the laboratory supported by the Monroe County Branch of the American Cancer Society.

1. Mulholland, S. W.: A Study of Prostatic Secretion and Its Relation to Malignancy, Proc. Staff Meet., Mayo Clin. **6**: 733-735, 1931.
2. Herbut, P. A., and Lubin, E. N.: Cancer Cells in Prostatic Secretions, J. Urol. **57**: 542-551, 1947. Herbut, P. A.: Cytologic Diagnosis of Carcinoma of the Prostate, Am. J. Clin. Path. **19**: 315-319, 1949.
3. Albers, D. D.; McDonald, J. R., and Thompson, G. J.: Carcinoma Cells in Prostatic Secretions, J. A. M. A. **139**: 299-303 (Jan. 29) 1949.
4. Boyer, W. F.: Carcinoma of the Prostate: A Cytologic Study, J. Urol. **63**: 334-345, 1950.
5. Peters, H.: The Prostatic Smear, Cancer **3**: 481-487, 1950.
6. Papanicolaou, G. N.: Cytology of the Urine Sediment in Neoplasms of the Urinary Tract, J. Urol. **57**: 375-379, 1947. Gradwohl, R. B. H., and Hall, A.: The Cytologic Diagnosis of Cancer in Urological Practice, Urol. & Cutan. Rev. **53**: 257-262, 1949. Chute, R., and Williams, D. W.: Experiences with Stained Smears of Cells Exfoliated in the Urine in the Diagnosis of Cancer in the Genito-Urinary Tract: A Preliminary Report, J. Urol. **59**: 604-613, 1948. Schmidlapp, C. J., and Marshall, V. F.: The Diagnostic Value of Urinary Sediment: A Review Based on the Papanicolaou Method, New York State J. Med. **50**: 56-58, 1950.

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(similarly prepared with albumin) was then placed on top of the first one, and the two pulled apart. Both slides were dropped instantaneously into the fixing solution (equal parts of 95 per cent alcohol and ether) before the spread had a chance to dry. The slides were fixed for a minimum of 30 minutes; they may, however, remain in the fixing solution for several days without impairment to the staining quality of the cells. The slides were stained with the staining technic developed by Papanicolaou. Both slides were then examined by one of us (H. P.).

RESULTS

The table summarizes the clinical and cytological examination of 162 patients. Although 200 records were reviewed for this study, 38 were discarded because the smears were unsatisfactory. Either an insufficient amount of prostatic secretion had been transferred to the slide or the material on the slide had been expressed from seminal vesicles only.[5]

Forty-four of the patients in this series had carcinoma of the prostate. Nineteen of these were proved by histological section. A histopathological diagnosis of carcinoma was made in one of the patients who on clinical examination was thought to have benign prostatic hypertrophy. Twenty-five patients were clinically known to have carcinoma of the prostate; five of these had bone metastases as demonstrated roentgenographically, and in 20 patients digital examination and blood phosphatase determination indicated cancer. In 38 of these 44 patients malignant cells were present in the prostatic smear. Four smears showed cells suspicious of cancer, whereas two failed to show malignant cells in the secretion (false negative).

Of the 102 patients with benign prostatic lesions, one prostatic smear was reported as showing malignant cells (false positive). Rectal examination of this patient revealed a diffusely hard prostate. Total prostatectomy was done. Histological section showed benign prostatic hypertrophy. The smears from three of these patients contained atypical cells. The subsequent clinical course of the disease in these three patients was thought to confirm the diagnosis of chronic prostatitis. Cells from infected prostates may at times be difficult to interpret, as they are shed in large, often degenerated, groups.

Sixteen patients, observed from several months to several years, had indurated areas in their prostates which have remained unchanged, though no treatment of any kind was given. These are classed as clinically questionable lesions. The smears in 10 of these patients have remained negative. Four patients had malignant cells in their smears, and two had atypical cells. These patients are still under observation.

COMMENT

The results of this study show that a carcinoma of the prostate sheds cells that are sufficiently characteristic to be recognized microscopically. This, however, is true only in patients who have not yet received hormone therapy. If estrogen is taken by the patient, the characteristic cancer cells may not be seen in the smear. Instead, degenerated (altered) malignant cells can be recognized. In those patients in whom the cancer responds well to estrogen medication, malignant cells disappear altogether from the prostatic smear. This might explain the discrepancy between the results of one recently published series [4] and our own. In that series only about one third of the smears from prostates harboring a cancer showed malignant cells; however, most of the patients were receiving estrogen therapy at the time of examination.

The material for cytological study is readily available in office practice. The interpretation of the prostatic smear must be done by a person experienced in the study of cells and particularly interested in prostatic cytology. A thorough knowledge of cell changes in the healthy and diseased prostate is essential before malignant changes can be interpreted successfully.

The question has been raised whether prostatic massage will disseminate cancer. There is no evidence that standard procedures like punch biopsy or transurethral resection cause the spread of this disease. We have no reason to believe that massage is more traumatic than these operative methods.

Digital examination of the prostate may give information from only a limited area of the gland. Secretion collected by massage will make available for study cells from all parts of the gland connected to the urethra by patent ducts. It is therefore reasonable to assume that examination of the prostatic secretions may lead to the diagnosis of carcinoma not detectable by clinical examination.

SUMMARY

The results of the examination of prostatic smears from 162 patients are presented. The cytological examination of the prostatic smear is found to be a useful addition to the methods of diagnosing carcinoma of the prostate.

Aero Medical Association.—In Detroit, Mich., Oct. 7, 1929, about 60 physicians interested in aviation medicine met to form the Aero Medical Association. Dr. Louis H. Bauer was elected president, and one of the five vice-presidents was Dr. Ralph N. Green, one of the early flight surgeons. (Major Robert R. Hampton was appointed to first flight surgeon in the A. E. F. September 17, 1918.) Colonel Ralph Green in 1916 was the first officer ordered to fly. During the war, Colonel Green was associated with Captain Eddie Rickenbacker, our World War I ace of aces. After the war, Colonel Green again became associated with "Captain Eddie" and was the first physician to establish a medical department of a commercial airline, the Eastern Air Line Medical Department located at Miami, Fla. Since its organization the Aero Medical Association has played an important part in bringing world leadership in aviation medicine to the United States. The *Journal of Aviation Medicine* which is the official journal of the Aero Medical Association began its publication on March 1, 1930. It is today the leading journal in aviation medicine. Dr. Louis H. Bauer has been the editor since it began publication.—Francis N. Kimball, M.D., The Progress of Aviation Medicine During the Past Half Century, *New York State Journal of Medicine*, Jan. 1, 1951.

CLINICAL NOTES

INSULIN RESISTANCE ASSOCIATED WITH LOCAL AND GENERAL ALLERGY TO INSULIN

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and
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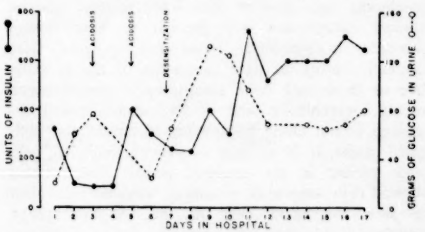
Since the introduction of insulin there have been a number of case reports dealing with insulin resistance. Martin [1] and many authors have arbitrarily selected the requirement of 200 units of insulin a day as the demarcation between the insulin-sensitive and the insulin-resistant diabetic patient. Smelo,[2] in a thorough and critical review of the problem of insulin resistance, presented 54 cases that had been reported in the literature up to 1948. Twelve of these insulin-resistant patients exhibited a local or general allergic response to insulin.[3] Kyle and Dyer [4] have recently encountered such a patient, and we wish to describe another patient with insulin resistance associated with local and systemic allergy to insulin.

REPORT OF CASE

Mrs. B. S.,[5] a 23 year old woman, was admitted to the Hospital of the University of Pennsylvania on Dec. 19, 1949. She had been in her usual state of good health until July 1948, at which time she noted the rapid onset of classic diabetic symptoms. One month later she visited a physician, who placed her on a diet and prescribed 30 units of protamine zinc insulin daily before breakfast. This insulin dosage was gradually reduced by the physician until it was stopped altogether within a few months. She failed to follow her diabetic diet, and two weeks later she was placed back on her former insulin dose after polyuria and weakness recurred. She continued to have polyuria, polydipsia and weakness, and the physician proceeded to supplement her protamine zinc insulin with additional doses of regular insulin throughout the day. During the ensuing six months, her insulin requirement steadily rose to a total of about 100 units daily for control of her symptoms and glycosuria.

In April 1949, she moved to another city and came under the care of Dr. Paul Polentz, who hospitalized her for treatment of mild acidosis. Her height at that time was 63 inches (160 cm.) and she weghed 99 pounds (44.9 Kg.). During her hospital stay she had a number of attacks of urticaria on various parts of her body. The wheals were of the giant type and occurred usually within one hour after an insulin injection. On two occasions she had edema of the tongue, and on one occasion became frightened because she seemed to be choking. She was quickly relieved by a subcutaneous injection of epinephrine. After therapy for the diabetic acidosis, she was placed on a standardized diet of protein, 75 Gm.; fat, 100 Gm., and carbohydrate, 180 Gm. with 200 units of insulin daily (100 units of protamine zinc insulin and 100 units of regular insulin given separately before breakfast). Her insulin dose was gradually increased to 150 units of protamine zinc insulin and 100 units of regular insulin given separately before breakfast, 15 units of regular insulin before lunch and 15 units of regular insulin at 10 p. m. nightly. During the next few months she continued to have increasing glycosuria and her insulin dose was raised to about 300 units daily. She was again hospitalized, on October 28. Physical examination revealed nothing remarkable except that the liver was palpated 2 inches (5 cm.) below the costal margin in the right midclavicular line. She was placed on a diet of protein 90



Daily insulin dosage and 24 hour glycosuria over a 17 day period while the patient was in the hospital.

Gm., fat 85 Gm. and carbohydrate 195 Gm., and her insulin dose was raised to 260 units of protamine zinc insulin and 160 units of regular insulin given before breakfast and 10 units of regular insulin before lunch, before supper and at bedtime. She still had an occasional urticarial lesion at a site distant from the insulin injection. Because of her increasing insulin requirement, she was referred to the Hospital of the University of Pennsylvania for further study.

On admission she complained of marked polydipsia, polyuria, weakness and fatigue. She had remained at a constant weight of 100 pounds (45.4 Kg.). She had been amenorrheic since April 1948. Systemic review was otherwise noncontributory. Past medical history revealed nothing except that she had given birth to a premature infant (4 months) in April 1948. The family history contributed nothing of significance.

Physical examination revealed a thin, poorly nourished white woman. Her height was 64 inches (163 cm.), and she weighed 98 pounds (44.5 Kg.). Her temperature was 98.6 F., pulse rate 96 and respiration rate 16. Her blood pressure was 100/78. General examination was noncontributory. There were a few small wheals on her right thigh where she had received her insulin injection on the morning of admission.

Routine laboratory studies revealed 4,800,000 red blood cells, with a hemoglobin content of 80 per cent, and 7,100 white cells, with 58 per cent neutrophils, 8 per cent eosinophils, 6 per cent monocytes and 31 per cent lymphocytes. The blood urea nitrogen was 17 mg. per 100 cc., and Kolmer and Kline serologic reactions were negative. The urine, except for containing varying amounts of sugar and an occasional

From the Diabetic Section, Medical Clinic, Hospital of the University of Pennsylvania.

1. Martin, W. P.; Martin, H. E.; Lyster, R. W., and Strouse, S.: Insulin Resistance; Critical Survey of Literature with Report of Case, J. Clin. Endocrinol. **1**: 387, 1941.

2. Smelo, L. S.: Insulin Resistance, Proc. Am. Diabetes A. **8**: 75, 1948.

3. Glassberg, B. Y.; Somogyi, M., and Taussig, A. E.: Diabetes Mellitus; Report of Case Refractory to Insulin, Arch. Int. Med. **40**: 676 (Nov.) 1927. Rudy, A.: Urticaria and Insulin Resistance with Reference to Relation of Skin to Carbohydrate Metabolism; Report of Case and Review of Literature, New England J. Med. **204**: 791, 1931. Hart, J. F., and Vicens, C. A.: Association of Extreme Insulin Resistance with Allergy: Report of Case, J. Clin. Endocrinol. **1**: 399, 1941. Shepardson, H. C.; Goble, G., and Withrow, P. B.: Extreme Insulin Resistance in Diabetes, California & West. Med. **60**: 201, 1944. Karr, W. G.; Scull, C. W., and Petty, O. H.: Insulin Resistance and Sensitivity, J. Lab. & Clin. Med. **18**: 1203, 1933. Allan, F. N., and Scherer, L. R.: Insulin Resistance Due to Allergy, with Report of Case, Am. J. M. Sc. **185**: 815, 1933. Schreier, H.: Insulin Resistance; Report of Clinical and Experimental Findings in Insulin-Refractory Case of Diabetes Mellitus, New York State J. Med. **43**: 1341, 1943. Lowell, F. C.: Immunologic Studies in Insulin Resistance; Report of Case Exhibiting Variations in Resistance and Allergy to Insulin, J. Clin. Investigation **23**: 225, 1944. Lerman, J.: Insulin Resistance; Role of Immunity in its Production, Am. J. M. Sc. **207**: 354, 1944. Haunz, E. A.: Present Status of Insulin Resistance, Arch. Int. Med. **83**: 515 (May) 1949.

4. Kyle, G. C., and Dyer, W. W.: Personal communications to the authors.

5. The patient was referred to us by Dr. Paul Polentz.

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white blood cell, was normal. Results of liver function studies, including thymol turbidity, thymol flocculation and cephalin flocculation tests, were all within normal limits. The basal metabolic rate was —7 per cent. A roentgen examination of the skull revealed a normal sella turcica. The chest roentgenogram was negative. On admission the fasting blood sugar was 70 mg. per 100 cc. However, four hours after breakfast and injection of 200 units of regular insulin, the blood sugar was 220 mg. per 100 cc.

Hospital Course.—The patient was placed on a diet of 90 Gm. of protein, 85 Gm. of fat and 200 Gm. of carbohydrate, and her insulin dose for the first 24 hours totaled 350 units. This was given in fractional doses of 200, 50, 50 and 50 units, all administered in the form of crystalline insulin. During this 24 hour period she passed 21 Gm. of glucose in her urine. The following day she was given 10 units of crystalline insulin intravenously every six hours in an effort to determine whether her insulin resistance was due to a local allergic condition at the site of injection. One hour after breakfast and an intravenous injection of 10 units of crystalline insulin, her blood sugar was 325 mg. per 100 cc. Marked polyuria, nausea and vomiting then developed; mild acetonuria was found within the next 12 hours. An additional 50 units of crystalline insulin was given subcutaneously. She excreted 60 Gm. of glucose in her urine for this 24 hour period. Increase of the insulin dose to 20 units of crystalline insulin intravenously every six hours prevented acidosis, but she passed 76 Gm. of glucose in her urine in the next 24 hour period. After a few injections of crystalline insulin subcutaneously, local induration and erythema developed, and on at least five occasions urticaria appeared distant from the local injection site within one hour following the injection. Similar wheals were seen after a few of the intravenous injections. In an effort to control the allergic phenomena, 10 mg. of diphenhydramine (benadryl®) hydrochloride was mixed with each insulin injection. This did not produce any change, either in preventing urticaria or in lowering her insulin requirement. The following day, after she had received 20 units of crystalline insulin intravenously every six hours, she was given 30 units subcutaneously every six hours (with diphenhydramine). But after eight hours she again noted marked polyuria associated with nausea and weakness and acetone was present in her urine. A total of 400 units of insulin was necessary to control the acidosis. She was then placed on a program of 200 units of crystalline insulin before breakfast and 100 units of crystalline insulin before supper, and she excreted 28 Gm. of glucose in her urine in the following 24 hours.

The next day she received skin tests with all the various insulin preparations available. The results are shown in the accompanying table. It was apparent that local erythema and wheals developed in response to all forms of insulin but less to crystalline insulin than to any of the others tested. An attempt to desensitize her was then made. She received multiple local injections of crystalline insulin starting with 1/8,000,000 unit and tripling every 20 minutes until a final dose of 120 units was given. However, there was no improvement in her resistance. In the next few days she was given multiple doses of crystalline insulin in amounts varying between 300 and 500 units daily. In spite of these large insulin doses she continued to excrete upward of 100 Gm. of glucose in her urine per 24 hours (chart). In addition to the diphenhydramine mixed with each insulin injection, she was given 50 mg. of tripelennamine (pyribenzamine®) hydrochloride orally three times daily. On this program she continued to have occasional urticaria lesions both at the site of the insulin injection and at areas distant from this site. Passive transfer tests (Prausnitz-Kustner technic) were performed, but the reactions were negative on two separate occasions.

Insulin-inactivating substances were demonstrated in the serum of the patient by the method reported by Stadie and his co-workers.[6] The technic measures the extent of chemical combination of insulin with the isolated rat diaphragm in vitro as reflected in the increased synthesis of glycogen by rat diaphragms after exposure to insulin. Incubation of normal or diabetic serum with insulin results in only a slight decrease in the insulin effect.

Serum from the patient produced a marked reduction in the insulin effect (25 per cent of normal).[7] This brief study indicated that the patient's serum contained more insulin-inactivating substances than does normal or diabetic serum.

After several days in the hospital it was felt that the most effective program was multiple injections of large amounts of crystalline insulin. On a regimen of fractional administration of insulin (250, 150, 100 and 150 units), the fasting blood sugar levels varied between 52 and 325 mg. per 100 cc. She passed about 70 Gm. of glucose per 24 hours in her urine on this program. She was discharged on the above insulin schedule and a diet of 90 Gm. of protein, 90 Gm. of fat and 200 Gm. of carbohydrate. She weighed 96 pounds (43.5 Kg.) at this time.

Further follow-up on this patient revealed that one month later her insulin requirement had decreased to 475 units daily. This was given as 200 units each of protamine zinc insulin and crystalline insulin before breakfast plus 50 units of crystalline insulin before lunch and 25 units of crystalline insulin before supper. She had gained 7 pounds (3.2 Kg.) and had begun to menstruate for the first time in two years. However, one month later an acute upper respiratory tract infection developed that temporarily necessitated about 800 units of insulin daily for control. Urticarial lesions still occur but appear less frequently.

Results of Skin Tests with Various Insulin Preparations

Insulin	Erythema, Cm.	Wheal, Cm.
Crystalline	1.5 x 1.5	0.5
Globin	2 x 2.5	1.5
Histone	3 x 3.5	1.5
Crystalline protamine zinc (NPH 50)	3 x 2	1.5
Protamine zinc	2 x 1.5	1.5
Saline control	0	0
Protamine control	1 x 1.5	0
Beef insulin	2 x 2	1
Pork insulin	2 x 2.5	1

SUMMARY

In a patient with insulin resistance urticaria developed after insulin injections, both at the site of injection and at areas distant from the injection. Reports of 13 similar cases have been found in the literature. By the method of Stadie and his co-workers it was demonstrated that the patient's serum contained a substance which interfered with the combination of insulin with the muscle of the rat diaphragm.

Antihistaminic substances (diphenhydramine, tripelennamine) administered orally or mixed with the insulin did not improve the situation. With the help of large doses of insulin (about 500 units) the patient's health has been improved and she has gained weight. During an upper respiratory tract infection she required a temporary increase of her insulin dose to 800 units a day. The prognosis for such a patient is uncertain, but a few of these patients reported on in the literature have shown a spontaneous regression in insulin requirements.

6. Stadie, W. C.; Haugaard, N.; Marsh, J. B., and Hills, A. G.: The Chemical Combination of Insulin and Muscle (Diaphragm) of Normal Rat, Am. J. M. Sc. **218**: 265, 1949.

7. Dr. Julian Marsh made the determination.

HERPES ZOSTER WITH A VARICELLIFORM ERUPTION AND PAROTITIS IN CHRONIC LEUKEMIA

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The frequent occurrence of herpes zoster in patients with chronic leukemia, particularly of the lymphatic variety, is well established. Occasionally, herpes zoster may be the only presenting sign of chronic lymphatic leukemia in elderly men. Craver and Haagensen [1] stated that herpes zoster was commoner in patients with lymphoblastoma than in the population at large. The development of a varicelliform eruption closely resembling chickenpox in the course of herpes zoster has been noted by many observers both in European and American medical literature. There is considerable experimental as well as clinical evidence to indicate that a definite relation between herpes zoster and varicella exists. The simultaneous occurrence of herpes zoster, varicella and parotitis, all of viral origin, has never been recorded in chronic lymphatic leukemia.

The following case illustrates the coexistence of herpes zoster, a generalized varicelliform eruption and bilateral parotitis with orchitis in chronic lymphatic leukemia.

REPORT OF CASE

A. W., a 70 year old man, was admitted to Manhattan General Hospital on Sept. 11, 1949, complaining of severe lancinating pain in the left side of the face and head and a rash over the forehead, nose and scalp. His illness began eight days before with pain in the back of the head, nausea, anorexia, weakness and fever. Two days later, numerous vesicles and bullae appeared over the forehead and scalp. His past history disclosed two previous hospital admissions for leg ulcers. He was treated at home with penicillin intramuscularly and local application of methylrosaniline chloride (gentian violet).

Physical examination on admission revealed an acutely ill patient whose temperature was 102.8 F., pulse rate 98 and respiratory rate 20 per minute. There was a gangrenous scab over the left side of the scalp in the frontal region with many bullae over the forehead and several vesicles over the nose. Both eyelids were markedly edematous, and ptosis of the left eyelid was apparent. The pupils were equal and regular and reacted to light and accommodation. Arcus senilis was present. The mouth contained many bad teeth, with several ruptured vesicles on the hard palate and left buccal mucous membrane. The neck was supple. There were many enlarged nodes in the anterior and posterior cervical regions. The thyroid was not palpable. In the axillas there were many enlarged lymph nodes. The chest was symmetrical, and its expansion was equal. The area of cardiac dulness was not enlarged to percussion. The heart sounds were of fair quality, and the rhythm was regular. A musical systolic murmur was audible over the apex and base. The blood pressure was 126/80. The lungs were clear to percussion, and on auscultation numerous rhonchi were heard throughout both lung fields. The abdominal examination revealed an epigastric hernia and moderate enlargement of the liver and spleen. Numerous lymph nodes were palpable in the subinguinal regions. The lower extremities disclosed marked pigmentation of the skin but no evidence of inflammation or edema. On rectal examination a moderately enlarged prostate without any nodules was felt. The reflexes were physiological, and no pathological toe signs were elicited.

Laboratory examinations on admission revealed a red blood cell count of 4,100,000, with a hemoglobin content of 15 Gm. The white blood cell count was 25,300, with a differential count of 67 per cent lymphocytes, 29 per cent neutrophils, 2 per cent eosinophils and 2 per cent monocytes. The nonprotein nitrogen was 60.8 mg. per 100 cc., and the total blood protein 5.68 Gm. per 100 cc., of which 3.20 Gm. was albumin and 2.38 Gm. globulin. The urine had a specific gravity of 1.021, with no albumin or sugar present, and on microscopic examination a few granular casts were seen. Roentgen examination of the chest was reported as showing increased densities in both hilar regions suggesting large mediastinal nodes. The lungs showed no productive changes, and the cardiac shadow was within normal limits. Subsequent blood counts continued to show an increased number of white cells, ranging from 49,200 to 86,000 per cubic centimeter, and of these, 90 per cent were lymphocytes.

Treatment was continued with 100,000 units of aqueous penicillin intramuscularly every three hours and, in addition, the patient was given 3 Gm. of aureomycin by mouth daily.

On the third hospital day, a diffuse vesicular eruption on an erythematous base appeared all over the face, trunk and extremities, including the palms and the soles. At this time all antibiotic therapy was stopped because of the possibility of drug toxicity. However, since there was no alteration of the skin rash after several days, the use of penicillin and aureomycin was reinstituted. Continued therapy with these agents had no effect either on the eruption or on the severity of the pain. Chloramphenicol, in the usual accepted dosage, was then given, without benefit. The intense pain and the skin lesions persisted. Thiamine hydrochloride, 300 mg. daily, was given intramuscularly, without any appreciable influence. Histological examination of several of the vesicles failed to demonstrate leukemic cell infiltration.

On the fifth hospital day, a swelling of both parotid glands was noticed. Three days later, the patient complained of severe epigastric pain radiating to the back, nausea, anorexia and vomiting. On the following day a left-sided orchitis appeared. This continued for a period of two weeks, after which the parotitis, gastrointestinal symptoms and orchitis cleared.

High voltage roentgen therapy was applied to the left side of the scalp on Sept. 23. A total of six exposures was given, one every other day. After the third treatment, the pain became significantly diminished. Three weeks after the onset of the illness, the temperature returned to normal. At this time the generalized vesicular eruption became hemorrhagic and was subsequently followed by crusting.

On Oct. 10, one month after the patient entered the hospital, he complained of haziness of vision in his left eye. On examination, the upper eyelid appeared retracted with considerable scarring and there was inability to close the eye. There were severe conjunctivitis, keratitis and scleritis despite the use of ophthalmic aureomycin solution from the outset. Several days later, the eyelids of the left eye were sutured in order to prevent further exposure of the cornea. The vision in this eye was completely lost. The general condition continued to improve from then on. He was discharged on the forty-fifth hospital day, at which time the total white blood cell count was 89,000, with 90 per cent lymphocytes.

COMMENT

The severe neuralgic type of pain along the ophthalmic branch of the trigeminal nerve; the constitutional symptoms of malaise, lassitude and fever, and the characteristic vesicular eruption over the left eye, forehead and scalp with subsequent bullae and crusting are unmistakable evidence of herpes zoster ophthalmi-

1. Craver, L. F., and Haagensen, C. D.: A Note on the Occurrence of Herpes Zoster in Hodgkin's Disease, Lymphosarcoma and the Leukemias, Am. J. Cancer **16**: 502 (May) 1932.

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cus. The conjunctivitis, keratitis and scleritis that developed during the fourth week of the illness may have been due primarily to the virus per se or secondarily to the lagophthalmos resulting from cicatrization of the upper eyelid. In over 50 per cent of cases of herpes zoster ophthalmicus, ocular complications do occur.[2] Complete loss of vision, which was noted in the present case, is not an infrequent sequela.

The presence of generalized lymphadenopathy, the mediastinal enlargement disclosed by roentgen examination of the chest, the hepatosplenomegaly and the peripheral blood picture established the diagnosis of chronic lymphatic leukemia. The frequent occurrence of herpes zoster in patients with chronic lymphatic leukemia has attracted the attention of numerous investigators, and many such reports appear in the literature.

The appearance of a generalized vesicular eruption over the entire face, trunk and extremities several days after the original ophthalmic lesion, presented numerous diagnostic possibilities. A toxic reaction to the antibiotics employed was entertained, but since the reinstitution of penicillin and aureomycin failed to alter the character of the rash, the indictment of these agents was soon abandoned. A specific cutaneous lesion containing the leukemic cells and a nonspecific leukemid eruption, so commonly found in chronic lymphatic lenkemia, were also considered.[3] The lack of leukemic cells in the skin biopsy specimen invalidated the former; evolution of the rash nullified the latter.

The character of the lesions and their diffuse distribution, however, favored the diagnosis of either generalized herpes or true varicella. Many writers consider the varicelliform eruption occurring several days after herpes zoster a distinct complication of herpes occurring more frequently in elderly men with chronic lymphatic leukemia.[4] It is referred to as zoster generalisatus, zoster universalis or varicelliform zoster. Frequently it can hardly be distinguished from true varicella. Indeed, there are some who believe that this scattered vesicular eruption occurring during the course of herpes zoster is a definte attack of chickenpox and that either the virus causing the two conditions is the same or the one is a variant of the other. This latter view is based on the fact that many cases of varicella have appeared after exposure to herpes zoster. The British medical literature[5] contains numerous references of coexisting herpes zoster and varicella. In this country, Director[6] and Fetter and Schnabel[7] have reported cases in which herpes zoster and varicella were present concurrently. Since a great deal of disagreement exists concerning the relationship of herpes zoster and varicella, it is more appropriate to consider the generalized vesicular eruption that developed in the above described patient a varicelliform eruption associated with herpes zoster.

The bilateral parotid swelling was not easily explained at first. The likelihood of leukemic infiltrations of the parotid glands as well as uveoparotid fever were considered. However, when the left-sided orchitis appeared, the diagnosis of viral mumps was a reasonable assumption. The abdominal symptoms of epigastric pain, nausea, anorexia and vomiting suggested involvement of the pancreas, which is not uncommon in epidemic parotitis and when present adds confirmatory evidence to its existence.

Until recently there has been no known specific treatment for herpes zoster, and symptomatic therapy with its chief direction toward the relief of pain was the goal. However, since the introduction of the newer antibiotics in the armamentarium of medical therapeutics, Finland,[8] and Dawson and Smith[9] employed aureomycin and chloramphenicol with encouraging results. My patient received the benefit of these drugs without any significant relief. Maximum comfort was obtained with deep roentgen therapy and analgesics.

60 Gramercy Park.

AXIAL TORSION OF FULL TERM UTERUS ASSOCIATED WITH POSTOPERATIVE VENTRAL HERNIA

Major Elmore M. Aronstam
and
Captain Richard L. Hughes
Medical Corps, United States Army

The rarity of axial torsion of the pregnant or myomatous uterus prompts this report of an unusual case.

Torsion of the gravid uterus as well as the nongravid uterus has been reported. When it occurs in the latter, it is usually associated with fibromyoma, ovarian masses or adhesions.[1] In 1937 McMurray and Gayden[1] reviewed the literature and discovered that approximately 143 such cases had been reported. Torsion of the gravid uterus has been reported in all trimesters of pregnancy. The infrequency of torsions of the pregnant uterus at term is manifested by the fact that Reis and Chaloupka[2] could find only 15 cases in 1935.

2. Edgerton, A. E.: Herpes Zoster Ophthalmicus: Report of Cases and Review of Literature, Arch. Ophth. **34**: 40 (July) 1945; **34**: 114 (Aug.) 1945.

3. Wintrobe, M. M.: Clinical Hematology, Philadelphia, Lea & Febiger, 1942, p. 620.

4. Ferreira Marques, J.: Herpes zoster generalisatus bei Leukämie, Arch. f. Dermat. u. Syph. **176**: 295, 1937. Wile, U. J., and Holman, H. H.: Generalized Herpes Zoster Associated with Leukemia, Arch. Dermat. & Syph. **42**: 587 (Oct.) 1940. Barton, R. L., and O'Leary, P. A.: Herpes Zoster Generalisatus Associated with Chronic Lymphatic Leukemia, ibid. **51**: 263 (April) 1945.

5. Woolley, E. J. S.: Herpes Zoster in an Isolated Community, Brit. M. J. **1**: 392 (March 16) 1946. Manning, J. J.: Concurrent Herpes Zoster and Varicella, ibid. **2**: 115 (July 22) 1944. Allen, F. M. B.: Varicella and Herpes Zoster in the Same Patient, ibid. **2**: 115 (July 22) 1944. Taylor, J.: Herpes Zoster and Chicken-Pox, ibid. **2**: 385 (Sept. 22) 1945.

6. Director, W.: Zoster with Varicelliform Eruption: Report of a Case, U. S. Nav. M. Bull. **42**: 186 (Jan.) 1944.

7. Fetter, F., and Schnabel, T. G.: Concurrent Herpes Zoster and Chickenpox: Report of Case, Arch. Int. Med. **83**: 502 (May) 1949.

8. Finland, M.; Finnerty, E. F., Jr.; Collins, H. S.; Baird, J. W.; Gocke, T. M., and Kass, E. H.: Aureomycin Treatment of Herpes Zoster, New England J. Med. **241**: 1037 (Dec. 29) 1949.

9. Dawson, L. M., and Smith, H. E.: Herpes Zoster: Treatment with Chloramphenicol, South. M. J. **42**: 696 (Aug.) 1949.

From the Twelfth Station Hospital, Fort Clayton, Panama Canal Zone.

1. McMurray, C. S., and Gayden, H. V.: Acute Axial Torsion of the Fibromyomatous Uterus, J. A. M. A. **108**: 709 (Feb. 27) 1937.

2. Reis, R. A., and Chaloupka, A. J.: Axial Torsion of a Full Term Pregnant Uterus, J. A. M. A. **104**: 2080 (June 8) 1935.

Few have appeared since then.[3] In the normal nonpregnant uterus there is a physiological torsion that never amounts to more than a few degrees. Reis and Chaloupka [2] feel that the twist is to the right in 80 per cent of the cases. Axial torsion may be considered pathological when beyond 30 degrees. Rotations as high as 540 degrees have been reported in the literature.[4]

Many theories have been advanced to explain this pathological torsion.[5] Its association with tumor, abnormal fixation of the uterus, pendulous abdomen, kyphotic pelvis and asymmetry of the uterine musculature suggests that a mechanical derangement is almost always involved. Robinson and Duvall [6] have further stated that without uterine abnormalities there can be no torsion. Siegler and Silversteen,[3a] however, have reported a case without any of the above defects.

The diagnosis of this condition is rarely made except in the operating room or on the autopsy table.[3b] In the pregnant woman it is frequently confused with premature separation of the placenta and rupture of the uterus. The symptoms are dependent on the degree and rapidity with which the torsion occurs. Severe lower abdominal pain, marked tenderness, vomiting, shock and collapse present themselves at once. Fever and leukocytosis follow. In the cases of slower onset, intermittent abdominal pain may be the only presenting symptom. Rarely, palpation has revealed the round ligaments running diagonally across the abdomen. In cases either of acute or of slow onset vaginal bleeding has been infrequently observed.

Prompt surgical exploration is mandatory in the acute variety and indicated at an early date in a chronic variety.

REPORT OF CASE

A 27 year old bigravid, uniparous Honduran woman was first seen in the antepartum clinic on Oct. 8, 1949. The history at that time disclosed that she had had the usual symptoms of the last trimester of pregnancy. Menarche had occurred at 10 years of age, and menses came every 20 to 22 days and lasted about three to four days. She experienced mild pain only on the first day. She had had a two day episode of vaginal bleeding in March 1949. Her last menstrual period had started on Dec. 15, 1948. The past medical history further revealed that in 1947 she had a suspension of the uterus in Honduras because she was "unable to become pregnant." At that time her postoperative course was complicated by development of a wound infection. In early 1948, in Honduras, she was delivered of a living girl weighing 8 pounds 10 ounces (3,912 Gm.) by cesarean section. The indications for the cesarean section were not apparent on questioning or on later examination. The general physical examination was noncontributory. Significant findings were limited to the abdomen and the pelvic contents. There was a huge postoperative ventral hernia at the side of a previous low midline incision. The medial borders of the rectus muscles were displaced laterally to the anterior axillary line. The fundus of the uterus was at the level of the umbilicus. Pelvic mensuration was within normal limits. Laboratory findings were essentially normal. The patient was seen regularly in the antepartum clinic. On Nov. 22, 1949 she was admitted to the hospital for elective cesarean section. Physical examination at that time revealed the blood pressure to be 120/72 and the pulse rate 76. Physical findings were limited to the abdomen and revealed an ovoid tumor compatible with a term uterine pregnancy. The fundus of the uterus measured 34 cm. The dorsal plane was to the left and the small parts to the right. Fetal heart sounds were heard in the lower left quadrant at the rate of 150 per minute. The fetus was judged to be in a vertex left occipitoanterior position. The anterior abdominal wall was extremely thin, and fetal parts could be felt unusually well through it. When the patient stood in an erect position, the abdomen became pendulous and the fundus of the uterus fell well below the symphysis pubis. Laboratory findings were within normal limits. The hemoglobin content was 13.9 Gm. per 100 cc. There were 11,500 white blood cells, with a differential count of 51 per cent polymorphonuclear leukocytes, 48 per cent lymphocytes and 1 per cent monocytes.

Four hours after admission the patient experienced sudden knifelife pains just above the symphysis. The pain was intermittent in character. Examination at this time demonstrated an extremely apprehensive patient who was perspiring profusely. Her blood pressure was 120/80, and her pulse rate was 86. Palpation just above the symphysis revealed no tenderness. No fetal heart sounds could be heard at this time. A tentative diagnosis of abruptio placentae or ruptured uterus at the site of the old scar was made.

The patient was taken to the operating room and placed under nitrous oxide, oxygen and ether anesthesia, and a pelvic laparotomy was performed. A full term pregnant uterus was found. The uterus, however, was extremely cyanotic and rotated through 360 degrees from right to left on itself (counterclockwise). The uterus was derotated, and normal color returned rapidly. A living boy was then delivered through a low classic incision. The infant required 10 minutes of resuscitation before viability was assured.

It was then necessary to perform supracervical hysterectomy to make repair of the abdominal wall defect possible. The excessive hernial sac was excised. The medial margins of the rectus sheaths were located and approximated in the midline with interrupted sutures. Excess skin and subcutaneous tissue were excised and the wound closed with further interrupted sutures. The patient withstood the procedure, which lasted 3½ hours, very well, having been given a transfusion during the operation. She was returned to the ward in excellent condition. The postoperative course in the hospital was uneventful. Her highest temperature, 101 F., occurred on the second postoperative day. All the skin sutures had been removed by the twelfth day, and the patient was allowed out of bed on the fourteenth day. The sixth week follow-up physical examination showed the abdominal wound to be healed nicely. The abdominal wall was firm, and there was no evidence of a hernial defect. Pelvic examination was essentially noncontributory. The cervix was well supported. The three month postoperative examination showed that the patient was continuing well and that the result of the herniorrhaphy was excellent.

COMMENT

This case has been considered worthy of report because of the unusual combination of axial rotation of the full term uterus associated with a huge ventral hernia.

3. (*a*) Siegler, S. L., and Silversteen, L. M.: Torsion of a Pregnant Uterus with Rupture, Am. J. Obst. & Gynec. **55**: 1053, 1948. (*b*) Corr, J. E.: Axial Torsion of the Gravid Uterus in Two Successive Pregnancies, Am. J. Obst. & Gynec. **46**: 749, 1943. (*c*) Mackenzie, L. L., and Nimeiman, A.: Torsion of the Uterus, Am. J. Obst. & Gynec. **39**: 883, 1940. (*d*) Rabbiner, B.: Torsion of the Pregnant Uterus in Patients with Kyphotic Pelvis, Am. J. Obst. & Gynec. **30**: 136, 1935. (*e*) Hanley, B. J.: Asymptomatic Axial Torsion of a Full Term Uterus Through 180 Degrees, Am. J. Obst. & Gynec. **38**: 164, 1939.

4. von Pall, G., cited by Vogel, J.: Axial Torsion of the Pregnant Uterus, Zentralbl. f. Gynäk. **64**: 641, 1940.

5. Feiner, D., and Kaldor, J.: Axial Rotation of the Pregnant Uterus, Am. J. Obst. & Gynec. **20**: 88, 1930.

6. Robinson, A. L., and Duvall, H. M.: Torsion of the Pregnant Uterus, J. Obst. & Gynaec. Brit. Emp. **38**: 55, 1931.

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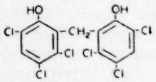
COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Hexachlorophene.—Gamophen (Ethicon).—Hex-O-San (Cole). —$C_{13}H_6Cl_6O_2$. —M. W. 406.92. —2,2′-Methylenebis-(3,5,6-trichloro)phenol.—2,2′-Dihydroxy-3,5,6,3′,5′,6′-hexachlorodiphenylmethane.—The structural formula for hexachlorophene may be represented as follows:



Actions and Uses.—Hexachlorophene is incorporated in soaps, detergents, oils and other vehicles for topical application to reduce the numbers and to inhibit the metabolism of microorganisms which occur naturally and pathogenically in the skin bacterial flora.

Residual amounts of hexachlorophene, which are adsorbed on the skin, maintain a reduction in numbers of bacteria. Optimum results are obtained only with *exclusive* application of the agent to the skin surface; substitution of other cleansing agents, including water, removes the adsorbed hexachlorophene with a resultant rapid increase in numbers and metabolism of microorganisms. The activity of hexachlorophene, like that of other antibacterial agents, is considerably reduced by blood serum and other organic matter.

Hexachlorophene is effective against gram-positive bacteria; the gram-negative organisms are much more resistant to its action. No evidence is presently available concerning its efficacy against acid-fast bacteria, fungi, bacterial spores, viruses or spirochetes. Irritant and toxic effects of hexachlorophene on the skin surface, even after long-continued daily use, have been infrequently reported. No data have been presented on the possibility of acquired resistance of the skin bacterial flora following prolonged use of hexachlorophene.

Products containing hexachlorophene are used for preoperative scrubbing, and preoperative and postoperative preparation of patients' skin. When used continually hexachlorophene is also an effective prophylactic agent in decreasing the incidence and severity of pyogenic skin infections including carbuncles, furuncles, miliaria, ammoniacal dermatitis, impetigo and seborrheic dermatitis ("cradle cap"). Neither hexachlorophene nor any other chemical agent should be relied on as a substitute for mechanical cleansing of the skin.

Dosage.—For use as an antibacterial agent hexachlorophene may be incorporated in a number of vehicles, viz., soap, detergents, creams and oils. Concentrations of 2 to 3 per cent (anhydrous weight basis) are efficacious in reducing the number of microorganisms inherent in the skin bacterial flora. Concentrations in excess of 3 per cent have not yet been shown to be more effective.

Tests and Standards.—

Physical Properties: Hexachlorophene is an odorless (or has a slight, phenolic odor), white to light tan, crystalline powder, which melts between 161 and 167 C. It is freely soluble in acetone, alcohol and ether; soluble in chloroform, and insoluble in water.

Identity Tests: Heat gently about 0.1 Gm. of hexachlorophene in a test tube: a colorless to amber solution is obtained which on further heating becomes green, blue and finally purple.

Dissolve about 5 mg. of hexachlorophene in 5 ml. of alcohol and add 1 drop of ferric chloride T.S.: a transient purple color develops immediately.

Dissolve about 0.1 Gm. of hexachlorophene in 0.5 ml. of acetone in a test tube, add 5 ml. of 5 per cent titanium trichloride and shake: a yellow-orange oil separates, which is soluble in benzene, chloroform and ether.

Dissolve about 0.5 Gm. of hexachlorophene in 3 ml. of anhydrous pyridine in a test tube by warming on a steam bath. Add dropwise 1 ml. of benzoyl chloride with shaking and warm the tube gently over a low flame for 1 minute. Pour the reaction mixture into a beaker containing 10 ml. of water, stir, allow the oily residue to settle and decant the water. To the residue add 10 ml. of 10 per cent sodium carbonate, mix well and warm over a low flame. Decant the water layer and wash the residue with 10 ml. of water. Using 30 ml. of ether, transfer the residue to a separatory funnel and wash the ether layer with three 15 ml. portions of water. Put the ether extract into a beaker, add about 2 Gm. of anhydrous calcium sulfate, stir well, allow the mixture to stand for 5 minutes and filter. Evaporate the ether on a steam bath in a current of warm air until the solution is nearly odorless. Take up the residue in 40 ml. of alcohol, warm the material on a steam bath and stir, and filter the hot mixture. Allow the filtrate to cool and filter off the crystals which separate. Dry them at 105 C. for 1 hour: they melt between 156 and 158 C. and do not respond to the ferric chloride T.S. identity test described earlier.

Purity Tests: Dry about 1 Gm. of hexachlorophene, accurately weighed, at 105 C. for 2 hours: the loss in weight is not more than 0.1 per cent.

Ignite about 1 Gm. of hexachlorophene, accurately weighed: the residue is not more than 0.1 per cent.

Assay: (Hexachlorophene) Accurately weigh about 0.2 Gm. of hexachlorophene into a 100 ml. volumetric flask, dissolve it in acetone and dilute to the mark with acetone. Transfer 1 ml. of this solution to a second 100 ml. volumetric flask and dilute to the mark with 0.025 per cent sodium carbonate. Place aliquots of 5, 10, 15 and 20 ml. (representing 0.1, 0.2, 0.3 and 0.4 mg. of hexachlorophene) into 50 ml. volumetric flasks. Add 1 ml. of freshly prepared 2 per cent 4-aminoantipyrine and dilute to the marks with the sodium carbonate solution. Add 0.5 ml. of 8 per cent potassium ferricyanide, shake vigorously and allow the flasks to stand for 5 minutes. Read the densities in a spectrophotometer at 4800 Å. using water as a blank. Plot the readings against concentration to form a standard curve. At a concentration of 0.2 mg. of hexachlorophene per 50.5 ml., the optical density should be between 0.422 and 0.448, equivalent in transmission to 38.0—35.8 per cent and equivalent to not less than 97 nor more than 103 per cent of hexachlorophene.

Dosage Forms of Hexachlorophene

LOTIONS. *Identity Tests:* Pour about 2 Gm. into a beaker and add, with stirring, 0.1 *N* hydrochloric acid until the mixture is just acid to litmus. Carry out the following tests on separate portions of the mixture: (*A*) To 10 ml. of the mixture in a beaker add 10 ml. of chloroform and mix well. Add 3-4 drops of ferric chloride T.S., mix, then allow the beaker to stand: the chloroform becomes purple. (Note: with some preparations acetone may yield better results than chloroform.) (*B*) To 2 ml. of the mixture in a test tube add 2 ml. of acetone and mix. Add 1 ml. of 20 per cent titanium trichloride and shake vigorously: a yellow oil separates.

Assay: (Hexachlorophene) Accurately weigh about 1 Gm. of the preparation into a beaker, and add 1 ml. of hydrochloric acid and 20 ml. of acetone. Stir and mix well. Filter and wash the residue with 2 additional portions of acetone. Evaporate the filtrate to dryness. Dry the residue at 105 C. for 1.5 hours and then, using acetone as the solvent, transfer it to a 100 ml. volumetric flask. Dilute to the mark. Transfer an aliquot equivalent to 0.2 mg. of hexachlorophene to a 50 ml. volumetric flask. Proceed as directed in the assay in the monograph for Hexachlorophene starting with, "Add 1 ml. of 2 per cent 4-aminoantipyrine . . ." Prepare a blank in the same way without adding potassium ferricyanide. Compare the reading obtained with those obtained in the standard curve. The amount of hexachlorophene present is not less than 90 nor more than 110 per cent of the labeled amount.

SOAPS. *Identity Tests:* If the preparation is a liquid, pour about 2 Gm. into a beaker; if it is solid, shave thin slices and cut finely with a spatula. Proceed as directed under identity tests in the section on Lotions.

Assay: Accurately weigh about 1 Gm. (finely divided if a solid) of the preparation into a beaker, and add 1 ml. of hydrochloric acid and 20 ml. of acetone. Stir well until the original particles have disappeared. Proceed as directed under assay in the section on Lotions starting with, "Filter and wash the residue with 2 additional portions of acetone." The amount of hexachlorophene present is not less than 90 nor more than 110 per cent of the labeled amount.

Surgical Soap Hex-O-San: 3.78 liter and 18.9 liter cans and 56.7 liter, 113.5 liter and 208.1 liter drums. A soap containing 2 per cent hexachlorophene. Cole Laboratories, Inc., Long Island City, N. Y.

Surgical Soap Gamophen: 127.5 Gm. cakes. A soap containing 2 per cent hexachlorophene. Ethicon Suture Laboratories, Inc., New Brunswick, N. J.

Germa-Medica Surgical Soap Hexachlorophene. 3.78 liter bottles. A soap containing 2.5 per cent hexachlorophene. U. S. Trademark 213,093. Huntington Laboratories, Inc., Huntington, Ind.

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FARM ACCIDENTS

Much has been accomplished by the national, state and local safety councils in the prevention of traffic and industrial accidents, but too little has been achieved in the reduction of farm accidents. In 1939 Powers [1] stated that farming was the most hazardous occupation in our country. His analysis of 310 accidents, occurring in a rural section of New York State and treated at Mary Imogene Bassett Hospital in Cooperstown, N. Y., revealed the deplorable lack of prevention in the farming industry. Stimulated by the above report Creevey [2] reviewed, in 1942, a series of 370 farm casualties admitted to the McLellan Hospital in Cambridge, N. Y., during the 20 years from 1920 to 1940. Creevey listed, among other factors contributing to the high accident rate in farming, the fact that the farmer, without special training, has to be a jack-of-all-trades—planter, lumberjack, carpenter, machinist, plumber, builder and animal trainer. Restricted income is also an important factor, at times, as it causes the employment of obsolete machinery and of incompetent labor. The individualistic nature of the farmer is another factor.

Analysis of 575 persons injured on farms between 1935 and 1943 and treated at the Mayo Clinic revealed, according to Young and Ghormley,[3] that most of the injuries were due to falls, farm machinery and livestock. In this group of 575 accidents there were 396 fractures, 65 traumatic amputations, 26 instances of transverse myelitis, nine cases of perforating perineal wounds, seven cases of avulsion of the skin of the penis and scrotum and 208 miscellaneous injuries. The tractor caused the largest single group of accidents due to machinery and was followed closely by the corn picker, corn shredder and buzz saw. Gas gangrene and tetanus are some of the dangers associated with farm accidents, because the farmer's hands and clothes are contaminated with fertilized soil and manure.

Powers,[4] in a recent paper, stated that in 1948 there were 16,500 lives lost in occupational accidents in the United States; 4,400 of these, or 26.6 per cent, were due to the hazards of farming. The occupational death rate among farm workers was higher in 1948 than in 1945. At the same time, the rate for miners and allied workers dropped from 187 to 154 per 100,000 employees; the rates for construction and transportation fell from 126 to 93 and from 68 to 48, respectively. Analysis made in 1948 by the Department of Agriculture covering over 3,000 counties in the United States revealed the following figures for the first four months of that year: Over a quarter of a million persons who were living or working on farms were injured seriously enough to lose at least one day's time from their regular activities. The cost of medical, dental and hospital care exceeded $11,000,000, and the total time lost was over 6,000,000 days. All this occurred during the four months of the year when farm accidents are much less numerous than they are during the summer and autumn.

Powers points out seasonal variations in the incidence of accidents, with a peak during July and August for which haying, repair and construction of buildings, and children at play were largely responsible. Half the accidents occurred either in the barn or in the barnyard. Fractures comprised about one third of the 1,527 recorded injuries. Extensive lacerations, division of nerves, tendons and blood vessels and partial or complete amputation of the extremities were common. The mortality in his series fell from 5.1 per cent in the first decade (1929-1938) to 0.8 per cent during the second (1939-1948).

Robinson,[5] commenting on the survey made by the Department of Agriculture in 1948, emphasizes that tractors were by far the most dangerous machines during this four month period, accounting for 30 per cent of the machine accidents. Among the hand tools, axes produced most of the serious injuries, accounting for 4 per cent of all accidents. Injuries resulting from the handling of heavy objects, stepping on or striking against sharp objects and getting in the way of falling trees and lumber amounted to 13 per cent. More accidents occurred in April than in any of the three preceding months, primarily as a result of greater farm work activity.

Accident and workmen's compensation insurance, according to Robinson, played a relatively minor role in defraying medical costs. About 17 per cent of the accidents with known costs were covered by insurance, and the insurance paid 21 per cent of the costs. The average amount of time lost per accident was about 22 days. Powers [1] pointed out that a serious injury is a major financial catastrophe to most farmers. Less than 10 per cent of farmers carried accident insurance or any other type of protection; even when such insurance was carried the amount was usually very small. This condition prevailed in 1939. Considerable improvement has taken place since then.

The increasing mechanization of the farms constitutes an acute problem in both reduction in the incidence of accidents and in the development of efficient methods of insuring the farmer against losses due to such accidents. The problem is primarily one of education of the farmer.

1. Powers, J. H.: The Hazards of Farming, J. A. M. A. **113**: 1375 (Oct. 7) 1939.
2. Creevey, K.: Farm Accidents, New York State J. Med. **42**: 2016 (Nov. 1) 1942.
3. Young, H. H., and Ghormley, R. K.: Accidents on the Farm, J. A. M. A. **132**: 768 (Nov. 30) 1946.
4. Powers, J. H.: Farm Injuries, New England J. Med. **243**: 979 (Dec. 21) 1950.
5. Robinson, T. C.: Gathering and Evaluating Accident Data with Respect to Farm People and Farm Workers, Am. J. Pub. Health **39**: 999 (Aug.) 1949.

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MINIMUM STANDARD FOR PHARMACIES IN HOSPITALS

The object of hospital standardization, in all its phases, is to promote the care and welfare of the sick and to give to patients the full benefits of modern medical and hospital service. It is with this aim, also, that the American Pharmaceutical Association and the American Society of Hospital Pharmacists have recently prepared a minimum standard for hospital pharmacies, recognizing that better organization, planning and facilities will be necessary to permit them to keep pace with the many discoveries and advances that are now prominently associated with the application of drug therapy.

As stated by the sponsoring agencies, the development of the present standard is not an attempt to cast all hospital pharmacies into a single mold, for it is well recognized that each hospital must necessarily vary its methods, space and facilities to meet the needs of its own patients. Through these efforts, however, "there has been evolved a standard which, when properly interpreted in the light of the requirements of individual organizations, may serve as a set of fundamental principles on which to build more efficient and effective pharmaceutical service for hospitals."

The minimum standard has been carefully planned. It consists of six major divisions dealing with organization, policies, personnel, facilities, responsibilities and the pharmacy and therapeutics committee. The organizational section emphasizes the importance of establishing the department under the direction of a professionally competent and legally qualified pharmacist. Formulation of policies is considered a joint responsibility of the pharmacist, the hospital administrator and the pharmacy and therapeutics committee. The section on personnel concerns the educational qualifications of the pharmacist in charge as well as the additional personnel that may be required for departmental operation. Facilities include such items as adequate space for all departmental activities, refrigeration, storage of narcotics and other pharmaceuticals, bookkeeping, library and filing equipment. Specific information is given with respect to the duties and responsibilities of the hospital pharmacist. These include the preparation and sterilization of injectable medication when manufactured in the hospital, manufacture and dispensing of drugs and pharmaceutical preparations, filling and labeling of drug containers, inspection of pharmaceuticals on all services, maintenance of approved antidotes and other emergency drugs, dispensing of narcotics and alcohol, maintenance of inventories, establishment of controls and specifications for the purchase of drugs, cooperation in educational activities, formulation of policies in accordance with hospital regulations, maintenance of records and preparation of required reports. The organization of the pharmacy and therapeutics committee is described, as well as its functions in the formulation of policies, the development and revision of formularies of accepted drugs and the evaluation of clinical data pertaining to drugs and pharmaceuticals requested for hospital use.

As a further aid in the application of these requirements, the American Pharmaceutical Association and the American Society of Hospital Pharmacists have officially approved the suggested plans for hospital pharmacies prepared by the United States Public Health Service with respect to 50, 100 and 200 bed general hospitals. The detailed information supplied in the minimum standard as well as the suggested plans for hospitals of varying size will be found extremely helpful as organizational guides for all institutions seeking to develop a new hospital pharmacy or extend the work of an existing department.

AIDS FOR SEARCHING CHEMICAL LITERATURE

Bibliographic problems have been greatly magnified in recent years by the high speed of modern research and the large amount of published technical information. A number of new aids for locating information in the literature were discussed at a recent symposium sponsored by the American Chemical Society.[1] Subjects discussed included methods of classification of research papers and text material, efficient devices for selecting all articles pertaining to any subject and technics for storage in research libraries. An aid to literature search that does not require expensive equipment and is particularly adaptable to the individual worker's files consists of abstracting by means of key-sort cards which are punched according to a predetermined code covering the various points of interest to the investigator. These can then be sorted either mechanically or manually. For larger projects, the Department of Agriculture has developed a microfilm selector, capable of scanning 70,000 index entries per minute, which reproduces those frames which pertain to any desired subject. A development envisaged for the near future is that of a high speed electronic computing device adapted to searching the literature, which would offer the advantages of speed, ability to exercise judgment and memory storage capacity. Such a machine offers the possiblity of revolutionizing the searching of scientific literature, provided the necessary indexing-coding methods are developed. This work has already been started by the American Chemical Society; however, the development of abstracting and indexing procedures generally acceptable to the scientific and technical professions may take many years. A recent aid for the reduction of library costs is the development of the microcard, which is essentially a contact print of microfilm. This microcard system permits the reproduction of entire articles or books on 3 by 5 cards. The microcards can be filed in space comparable to that for a library card file, but such a file contains not merely card references but entire articles and books. The obvious saving in binding, storage space and cataloguing is tremendous. This system is readily adaptable to very small installations and facilitates storage of material that might be considered of marginal value, such as work sheets or unprinted office records.

1. New Techniques in Chemical Literature, Indust. & Engin. Chem. 42: 1456-1468 (Aug.) 1950.

Rapidity of selection is achieved through the joint use of microcard and microfilm.

While all these devices are valuable additions to the field of literature search, it should not be forgotten that their value depends largely on a high degree of skill and foresight in the indexers and classifiers, who must be prepared to incorporate new concepts and new terminology into the framework of reference used for indexing and coding.

INSULIN AND FAT FORMATION

Indications of a relation between insulin, or more specifically a lack of insulin such as occurs in diabetes mellitus, and fat metabolism were observed many years ago. The hyperlipemia, ketosis and ketonuria of the diabetic may be cited as well known examples, and each may be interpreted as evidence of an impairment in the metabolism of fat, perhaps related to a lack of insulin. Indeed, over 30 years ago several clinical authorities,[1] observed that patients with diabetes mellitus fared better on a high fat diet than on high protein or normal diets. Similar results were obtained experimentally only a few years ago in rats made diabetic by alloxan [2]; furthermore, rats made diabetic by pancreatectomy show a distinct preference for fat if allowed a "free choice" diet.[3] The symptoms of diabetes were absent in each case as long as the animals were allowed the high fat ration. One interpretation of the foregoing observations is that the diabetic organism has a limited ability to synthesize fat—a deficiency that is compensated for by increase of the fat intake.

Recent experimental work partly with the aid of isotopic "tracer" elements seems to support the above thesis. Apparently, Drury and his co-workers at the University of Southern California [4] first drew attention to the possibility that a major function of insulin is to increase the synthesis of fat in the organism. These investigators found that only about 25 per cent of the carbohydrate fed to insulin treated rats could be accounted for by oxidation and by the deposition of glycogen in the liver and carcass. They suggested that a major portion of the carbohydrate was converted to body fat under the action of insulin. This concept was supported and extended by a group of investigators at Columbia University,[5] who demonstrated, in both rats and rabbits made diabetic by injections of alloxan and then given deuterium containing water, that the synthesis of fatty acids from glucose was much less than in normal control animals. The administration of insulin to control rabbits produced a decided increase in fatty acid synthesis as evidenced by a prompt increase in the deuterium content of the body fat over that of animals not treated with insulin.

Obviously, the most convincing, direct evidence that insulin increases fat synthesis from carbohydrate would be the demonstration that insulin increases the conversion of glucose labeled with radioactive carbon to fat, which then contains the same labeled carbon atoms. Such results have been currently reported by investigators [6] who found that the livers of normal rats converted relatively large amounts of C^{14}-labeled glucose to fatty acids whereas there was almost a complete failure in fat synthesis in the livers of diabetic (alloxan) rats. The pretreatment of the diabetic rats with insulin resulted in a decided increase in the ability of the liver to convert glucose to fatty acid. Insulin likewise increased fatty acid synthesis from glucose in the livers of normal rats. The effect of insulin in increasing lipogenesis from glucose was much greater than its effect in increasing the oxidation of glucose or increasing its deposition as glycogen.

If the foregoing observations are adequately confirmed, the conclusion will undoubtedly be warranted that a major function of insulin is to promote the conversion of carbohydrate (glucose) into fat. From a practical standpoint, this may serve to explain the well known effect of insulin in increasing body weight in certain underweight persons. From a more theoretical point of view, the above observations on the lipogenic action of insulin add to the current evidence from studies of glucose oxidation and conversion to glycogen, that this hormone plays a central, vital catalyzing role in the metabolic conversions of glucose to intermediates, which may then be transformed to fatty acids or to glycogen or oxidized to yield energy. Thus, the above work constitutes another distinct advance in the elucidation of the fundamental role of insulin in the organism.

1. Allen, F. M.: Am. J. Med. Sc. **153**: 313, 1917. Newburgh, L. H., and Marsh, P. L.: Arch. Int. Med. **26**: 647, 1920.
2. Burn, J. H.; Lewis, T. H. C., and Kelsey, F. D.: Brit. M. J. **2**: 752, 1944.
3. Richter, C. P.; Schmidt, E. C. H., and Malone, P. D.: Bull. Johns Hopkins Hosp. **76**: 192, 1945.
4. Drury, D. R.: Am. J. Physiol. **131**: 536, 1940. Pauls, F., and Drury, D. R.: J. Biol. Chem. **145**: 481, 1942.
5. Stetten, D., and Boxer, G. E.: J. Biol. Chem. **156**: 271, 1944. Stetten, D., and Klein, B. V.: ibid. **162**: 377, 1946.
6. Chernick, S. S.; Chaikoff, I. L.; Masoro, E. J., and Isaeff, E.: J. Biol. Chem. **186**: 527, 1950. Chernick, S. S., and Chaikoff, I. L.: J. Biol. Chem. **186**: 535, 1950.

QUARTERLY CUMULATIVE INDEX MEDICUS

Volume 46 of the *Quarterly Cumulative Index Medicus,* covering the period July-December 1949, is being mailed to subscribers this month. The increased size of the book and the change to offset printing are prominent features. Because the type size is larger, there are fewer entries per page and the print is more legible than in former volumes. In the interest of simplification and uniformity, certain changes have been made in the abbreviations of titles in the list of periodicals indexed. This list includes 1,233 journals, 529 in English and 704 in foreign languages, from which 27,242 articles have been indexed. As announced in the last issue of the Index, volume 45 (Jan.-June 1949) will be published at some future date, but volume 47 (Jan.-June 1950) is now being processed and will appear this year. Most of the copy for volume 48 is in file, and cards which cover current material are now being assembled for volume 49 (Jan.-June 1951).

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THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

An astute observer, who has known many of the great and near-great from close association, once said to me, "Beware of the man in public life who hasn't any active enemies; probably he hasn't any convictions, either." Then he added, "You can judge a man by the enemies he makes just as accurately as by his friends." I have been reminded of that diagnosis (and solaced no little by it) during recent months when many uncomplimentary things were said about me by the thwarted, unhappy advocates of socialized medicine, and by a few of their apologists in the medical profession, too. After considerable soul searching, I came to the conclusion that at least no one would be likely to say that Henderson lacked convictions. Then, after some research into the connections and background of our intemperate critics, I reached the further conclusion that, when my term as President of the A. M. A. is finished, I shall be perfectly happy to be judged by the enemies I have made in medicine's cause.

Many of you who have been the target of bitter criticism, because you have had the courage to defend your right to practice medicine in freedom, may find medication for your wounded feelings, too, in taking calm appraisal not only of medicine's new friends but of its most vitriolic enemies. The pinkish pigmentation (and that's a mild way of saying it!) of the Committee for the Nation's Health—many of whose officers, directors and most vocal members have been listed in the files of the House Un-American Activities Committee for subversive connections or activities—should give you new assurance of the rightness of your cause when that committee violently attacks you. If the Committee for the Nation's Health spoke well of us, the American people would have cause to distrust us. We should consider it a badge of honor, too, that the attack on our profession in Washington has been led by such discredited, socialistic bureaucrats as Oscar Ewing, Pepper and Biemiller, the latter two now in involuntary retirement.

If our campaign of education had failed, as Dr. James Howard Means sought to convey in his ill-advised article in the *Atlantic Monthly*, and as Bernard DeVoto implied in his more recent article in *Harper's*, Mr. Ewing would still have a friend in the White House, instead of a suspicious employer, deeply hurt over being led down a political dark alley. If we had been unsuccessful, as our bitter critics contend in their attempts to confuse both the profession and the public, Mr. Biemiller would still be the churlish scold of Congress, instead of being reduced to seeking per diem patronage favors from the Federal Security Agency.

There is good reason to consider the character of our enemies at this time, because the success of American medicine's fight against socialization, even though the issue is still far from resolved, has embittered our opponents and has precipitated a campaign of unrestrained vilification and denunciation against the American Medical Association and all its leaders. Now that our danger is somewhat reduced, and our vigilance somewhat relaxed, it is doubly important that we not permit ourselves to be taken in by the clever, divide-and-conquer tactics of our enemies, particularly when they find spokesmen to voice their complaints who have not been clearly associated with the socialization movement. We need to question the source of criticisms of the A. M. A. and our National Education Campaign, not only the apparent source but the behind-the-scenes origin. It is not for myself that I speak, because the President of the American Medical Association, during a period when it is necessarily militant in behalf of medical freedom, must expect to come under attack. It is one of the dubious prerogatives of the office which may, however, serve a useful purpose in that it acts as a deterrent to any tendency toward vanity.

The recent bitter attacks, such as the Means and DeVoto articles, both of which, incidentally, follow the line laid down by the Committee for the Nation's Health and Oscar Ewing's office, have not only been directed at me, however, but have been full scale attacks on the American Medical Association, designed to discredit its officers, its Board of Trustees, its Campaign Coordinating Committee, its House of Delegates and Whitaker & Baxter, the directors of our National Education Campaign. There is a sinister design here—an attempt to convince the profession that doctors should be content to be doctors, but never citizens; that we have dragged our scientific robes in the dust because we have learned to talk to the American people in the language of the people, instead of talking to each other in our medical society meeting rooms. There is an effort to convince us that we are competent only to treat the sick, never to talk intelligently with the healthy, able-bodied people of the community about the economic health and social well-being of the nation. We are to leave that job to the bureaucrats and the easy chair economists and social planners who speak for reaction in the false prose of pseudo liberalism.

Let's not be misled by that type of double talk from the camp of our opposition. Certainly, we cannot afford to retire to our ivory towers now and politely disparage the work of the surgeons who cut out the cancer of socialization, on some flimsy pretext that the operation was unorthodox or unethical. I have been intimately associated with American medicine's campaign throughout the past two years, and I am proud of the campaign we have conducted because it has been rooted in truth and has been successful in bringing the greatest measure of public support our profession ever has enjoyed.

Dr. Means concluded his article by saying, "What organized medicine needs in serving its political function is a new and more enlightened leadership." Note that statement, carefully, and weigh it in light of the knowledge that the Committee for the Nation's Health—the official lobby for socialized medicine—made an appeal for funds to distribute reprints of Dr. Means' article and reported happily that he was "ready" to lead a "Young Turk's" revolt in the American Medical Association. Just what kind of leadership do you imagine the Committee for the Nation's Health wants in American medicine?

ELMER L. HENDERSON, M.D.
Louisville, Ky.

ORGANIZATION SECTION

FEDERAL LEGISLATION

Treatment for Veterans

A bill, H. R. 2157, was introduced by Representative Rogers of Massachusetts, at the request of the Veterans of Foreign Wars, which would provide outpatient treatment for non-service-connected disabilities for certain veterans. This bill would authorize outpatient treatment for veterans entitled to receive compensation for 100 per cent disability or pension for permanent and total non-service-connected disability if outpatient care is determined to be medically feasible and less costly than hospitalization by the Veterans Administration. Outpatient care could include medical, surgical and dental services and supplies and appliances.

STATE LEGISLATION

Arizona

Bill Introduced.—H. 130, proposes amendments to the **chiropractic** act among which is the proposal that those who began the study of chiropractic prior to the effective date of this act in institutions commonly recognized and conducted as chiropractic schools should be exempt from the act's provisions.

Arkansas

Bills Introduced.—H. 301, proposes amendments to the medical practice act relating to the **definition of the practice of medicine** by, among other things, providing that any one who shall examine by any means whatsoever any person or material from such person, including any organs, structure, tissue, body fluid, excretory material or exudate for the purpose of diagnosing, treating, curing or relieving shall be regarded as practicing medicine. The proposal also would specifically prohibit the **corporate practice of medicine** but would provide that nothing in the proposal should be construed to permit any person licensed under the medical practice act to be employed by any hospital, corporation, group association or partnership on a salary basis, except for teaching or research or charitable services or the performance of services in privately owned and operated hospitals owned or operated by persons licensed to practice medicine or group clinics. H. 302, to amend the basic science act, proposes to authorize the board to make use of the **injunctive process** in order to restrain and enjoin violations of the basic science act. SCR. 5, proposes that the legislative council be directed to cause a study to be made of the causes and effects of **alcoholism.** S. 255, proposes that any person who has secured a prescription from a licensed physician shall be the **sole owner of such prescription** and shall have the right to take the same to any drug store at his pleasure and have the same refilled as many times as he or she may elect, so long as the prescription contains no narcotics as defined by the pure food and drug law.

California

Bills Introduced.—A. 1541, proposes to authorize the state board of public health to set up regulations for the licensing of **clinical laboratory technicians,** clinical laboratory technician trainees, and clinical laboratories. A clinical laboratory technician is defined as being a person licensed to perform the technical procedures called for in a clinical laboratory under the direction of a clinical laboratory technologist or physician and surgeon. S. 672, proposes the creation of a **board of physical therapy examiners** and defines physical therapy to mean the treatment of any bodily or mental condition of any persons by the use of the physical, chemical and other properties of heat, light, water, electricity, iontophoresis, massage and active, passive and resistive exercise. The use of roentgen rays and radium for diagnostic and therapeutic purposes, and the use of electricity for surgical purposes, including cauterization, would not be permitted by the proposal.

Connecticut

Bills Introduced.—H. 856 and S. 293, propose to authorize the commissioner of education to establish training courses to prepare persons interested in qualifying as **trained psychiatric attendants.** H. 1347, proposes to authorize the state treasurer to issue bonds, the proceeds of which shall be used, in part, to **establish,** construct and equip a **medical college.** S. 693, proposes that the state health commissioner shall require the determination of the **Rh factor and the blood group** of each pregnant woman and her husband in a manner similar to the existing requirements of prenatal examinations for syphilis. S. 694, proposes that the state health commissioner shall immediately undertake and establish a voluntary program for the testing of the blood of every resident of Connecticut to determine **blood group and Rh factor.** S. 696, proposes to authorize licensed physicians to prescribe methods for the temporary **prevention of pregnancy** in married woman when, in the opinion of the physician, pregnancy would endanger the life or injure the health of such person.

Georgia

Bills Introduced.—HR. 97, proposes the appointment of a committee to investigate the procedure and method of admission now in effect at the **university medical school** to determine if Georgia boys and girls are given preference in being admitted to the school over out-of-state students. H. 255, proposes the creation of a **state board of examiners of psychologists.** A psychologist is defined as a person who holds himself out to be an applied psychologist and renders to individuals or to the public, for fees, any service involving the application of recognized principles, methods and procedures of the science and profession of psychology, such as interviewing, administering and interpreting tests of mental abilities, aptitudes, interests and personality characteristics, for such purposes as psychological diagnosis, classification or evaluation, or for educational or vocational placements, or for such purposes as psychological counseling, guidance or readjustment. Nothing in the proposal would be construed as permitting the administration or prescription of drugs or in any way infringing upon the practice of medicine. S. 53, proposes the creation of a Georgia **commission on alcoholism** to study methods and facilities available for the care, custody, detention, treatment, employment and rehabilitation of alcoholics.

Indiana

Bill Introduced.—S. 189, proposes that any **licensed physician** with an unlimited license to practice medicine and surgery in the state shall be **admitted to the staff** of any hospital maintained in whole or in part by public taxation and shall be entitled to administer and prescribe medicines or perform surgery on any patient admitted to such hospital.

Iowa

Bill Introduced.—H. 343, proposes the repeal of the law relating to **coroners** and the creation of a board on **post-mortem examinations** under the direction of a chief referee who would be a skilled pathologist and eligible to be licensed in Iowa to engage in the practice of medicine and surgery.

Maryland

Bill Introduced.—HJR. 3, proposes to direct the director of civilian defense to enlist the full cooperation and support of the **chiropractic** profession in any civilian defense program.

Massachusetts

Bills Introduced.—H. 1337, proposes the enactment of a **disability benefits law.** H. 1460, proposes to prohibit the performance of any **lobotomy,** "topectomy," or transorbital operation, or any brain operation designed to correct or alleviate any functional disorder of the mind, except upon certain stated conditions. S. 113, proposes to authorize the trustees of the University of Massachusetts to **establish a medical school** at Springfield.

Minnesota

Bill Introduced.—H. 468, proposes to authorize the formation of membership associations exclusively to establish and operate **voluntary nonprofit plans** for the medical and hospital care of groups of persons through agreements with duly licensed physicians and surgeons and through agreements with hospitals, or by ownership thereof.

Montana

Bill Introduced.—H. 365, to amend the medical practice act, proposes that **displaced persons** applying for a license to practice medicine, who have passed the written examination required by the act, shall not be disqualified to receive a certificate by reason of certain rules of the board of examiners relating to citizenship, residence, internship or schools attended.

Nebraska

Bill Introduced.—LB. 427, proposes that it shall be unlawful for any person to throw away or abandon any **dead human body,** or any portion thereof, in any place other than a regular place for burial and under a proper death certificate.

Nevada

Bill Introduced.—A. 76, proposes the creation of a state **board of examiners of naturopathic physicians** and defines naturopathy as "a philosophy and system of the healing arts embracing prevention, diagnosis, cure and treatment of human physical and mental ills, diseases, traumas, and deformities, by the use and prescription of substances of plant, ani-

The summary of federal legislation was prepared by the Washington Office of the American Medical Association and the summary of state legislation by the Bureau of Legal Medicine and Legislation.

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mal or mineral origin as are naturally found in and required by the human body, herbs, cell salts, tissue remedies, plants, roots, barks, mineral and vegetable oils, antiseptic, germicidal, and bacteriostatic agents, vitamins, minerals, and other natural methods using such forces and substances as light, air, clay, water, heat, rest, diet, electricity, massotherapy, and other manipulative methods. These agencies are known as: phytotherapy, hormonotherapy, chromotherapy, autotherapy, suggestive therapy, psychology, psychotherapy, manual and digital therapy, including x-ray for diagnostic purposes, botanical therapy, endocrinotherapy, biochemistry, mechanotherapy, dietetics, vitamin and mineral therapy, first aid and hygiene and sanitation, minor surgery, proctology, gynecology, obstetrics, anesthesiology, and penetration of the skin for diagnostic purposes and vitamin, mineral and endocrine therapy, and all other natural methods for the purposes of rehabilitation and restoration to normalcy as now or hereafter taught in naturopathic schools, colleges, universities and institutions: provided, however, that nothing herein shall be construed to permit a naturopathic physician to perform any penetration of the abdominal, thoracic, optic, or cranial cavity, or other major operations requiring an incision; nor to prescribe any drugs, medicines, narcotic, or other remedies whereby a prescription is required, nor the administration of x-ray or radium therapy." Two licenses would be issued by the board: a naturopathic physician certificate, authorizing the holder "to diagnose and to treat all human ailments and abnormalities as provided in" the above definition, without the use of "minor surgery or obstetrics"; a minor surgery and obstetrics certificate authorizing the holder "to practice minor surgery and obstetrics according to accepted procedures; but shall not authorize the penetration of the eyes, or the cranial, thoracic, or abdominal cavities, nor the amputation of human arms, hands, fingers, legs, feet or toes, nor the practice of plastic surgery, or what is commonly known as 'major operative surgery'."

New Jersey

Bill Introduced.—A. 230, proposes that a physician shall not be allowed or compelled to disclose any **confidential communication** acquired in attending a patient in a professional capacity which was necessary to enable him to act in that capacity, with certain exceptions.

New Mexico

Bill Introduced.—H. 136, proposes to make it unlawful for any person to sell any **"dangerous drug"** at retail except on the prescription of a licensed physician, dentist or veterinarian. The term "dangerous drug" would be defined to include any hypnotic drug, aminopyrine, cinchophen, diethylstilbestrol, ergot, cotton root, sulfanilamide and thyroid, or any of their compounds or mixtures.

New York

Bills Introduced.—A. 1368, proposes the enactment of a New York state **health service act.** A. 1477, proposes to make municipalities liable for **malpractice** of resident physicians, interns, or any licensed physician or dentist rendering free medical services in a public institution or in a course of home-care service maintained by a public institution. A. 1499, proposes the establishment of an adult **hygiene and geriatrics division** in the state department of health to formulate and carry out a program designed to improve the health and vitality of middle-aged and elderly citizens of the state. A. 1592 and S. 1330 propose to prohibit the sale of **hypodermic syringes** except upon the written order of a duly licensed physician or veterinarian. A. 1686, proposes to require physicians or any persons acting as a midwife in attendance at the birth of a child to cause the **footprints** of such child and the **thumbprints** of the mother of such child to be taken and to make failure to do so a misdemeanor. A. 1878, proposes to amend the law relating to **physiotherapy** by permitting licentiates to use the roentgen ray or x-ray. SR. 48, proposes to request the state commission of health to make an immediate and comprehensive investigation of the nature, extent and effects of the use of **narcotic drugs** in the state. S. 1248, proposes to require a physician to immediately report to the health officer every case of **infantile paralysis** in his care. S. 1501, proposes to prohibit the **sale of lithium salts** except upon prescription of a licensed physician.

Ohio

Bill Introduced.—H. 275, proposes the enactment of a **temporary disability benefits law.**

Oklahoma

Bills Introduced.—H. 198, proposes to authorize the boards of chiropody, chiropractic examiners, medical examiners, optometry examiners, osteopathic examiners to make use of the **injunctive process** in enforcing the provisions of such act, provided that none of such boards may be permitted to institute an action to enjoin any person who holds a valid license issued by any other of the above named boards without first obtaining the written consent of said other board to file such injunction proceeding. H. 241, proposes regulations for the licensing of institutions desiring to obtain **animals from established dog pounds** for purposes of investigation or instruction concerning the structure or functions of living organism, the causes, preventions, control, or cure of diseases or abnormal conditions of human beings or animals.

Oregon

Bills Introduced.—H. 254, proposes that whenever the word **"physician"** is used in a statute, unless there is an express intent to the contrary ascertainable from the content, it shall mean a person licensed by the board of medical examiners to practice medicine and surgery in the state. S. 153, proposes the creation of a **state board of massotherapy examiners** and defines massotherapy as including manipulation of methodical pressure or friction against, and stroking and kneading, the body with or without such appliances as vibrators, infra-red heat and baths in order to maintain good health and to establish and maintain the body in good physical condition.

Pennsylvania

Bill Introduced.—H. 60, proposes that in any proceeding to establish paternity, the court, on motion of the defendant, shall order the mother, her child, and the defendant to submit to one or more **blood grouping tests** by a duly qualified physician to determine whether or not the defendant can be excluded as being the father of the child and proposes that the results of such tests may be received in evidence, but only in cases where definite exclusion of the defendant is established.

Rhode Island

Bill Enacted.—H. 606, was adopted January 26, 1951. It requests the director of public health to set up, in various sections of the state, stations manned by trained department of health personnel to give so-called **influenza shots free of charge** to those desiring the same.

Texas

Bills Introduced.—H. 111, S. 61 and S. 75, propose to require **all practitioners** of the healing art to indicate on any sign, pamphlet, letterhead or the like a designation of the system of the healing art which he is by his license permitted to practice.

Utah

Bill Introduced.—S. 140, proposes to **exempt** physicians from city **license fees.**

Washington

Bills Introduced.—H. 152, proposes the creation of a state commission for the control of **alcoholism.** H. 177, proposes to require every hospital, upon demand being made, to render at such hospital first aid to any person requiring **emergency assistance** and would make the hospital, and any physician who is a party to the failure to comply with such section, liable in damages caused by the failure to furnish such first-aid services.

West Virginia

Bills Introduced.—H. 125, to amend the medical practice act, proposes that any citizen of the state of West Virginia who graduated from a medical school on or after January 1, 1939, and met all the requirements of law pertaining to education and training except that the medical school from which he graduated was not a **class A medical school,** shall nevertheless be entitled to take the examination for license if his school has been classified as such class A medical school prior to December 31, 1948. H. 145, proposes amendments to the **osteopathic practice act** including provisions relating to the annual registration of such practitioners, such annual registration to be conditioned upon a showing that the applicant has completed a two-day educational refresher course conducted by the West Virginia Osteopathic Society. H. 169, proposes the enactment of an unemployment compensation **disability benefits law.** H. 184 and S. 121 propose regulations for the establishment, operation and maintenance of centers for the **vocational rehabilitation** of disabled persons. H. 270, proposes the enactment of a **disability benefits act.** H. 302, proposes amendments to the medical practice act which would bring **osteopathic physicians and surgeons** within the scope of the act. H. 303, to amend the medical practice act, proposes to reconstitute the **medical licensing board** of West Virginia with two additional members, those two being osteopaths. S. 54, proposes to direct the University Board of Governors to establish a **four-year school of medicine** and dentistry at West Virginia University. S. 163, to amend the medical practice act relating to **graduates of foreign medical schools,** proposes that such persons whose pre-medical education meets all the requirements and who has been a citizen of the United States and has resided in West Virginia for at least ten (10) years preceding his application and who has been recommended by the county medical society as possessing the experience and learning required to practice medicine and surgery and who shall pass an examination before the medical licensing board, shall receive a certificate therefor.

Wisconsin

Bills Introduced.—A. 219 and S. 234, to amend the workmen's compensation act, propose to authorize employees to have **free choice of specialists** from a panel of specialists to be named by their employer. S. 126, proposes to authorize the state board of health to appoint a qualified physician and surgeon as a **special medical officer** to sparsely populated areas of the state and who shall be deputized to perform such public health functions and duties throughout the area as the board may prescribe.

Wyoming

Bills Introduced.—H. 122, proposes the enactment of a Wyoming **prophylactic control** act which would regulate the sale of prophylactics. This proposal would provide that a physician in the regular course of his professional practice may give or sell prophylactic to his patient. S. 37, proposes to authorize counties or groups of counties to establish **multiple** county or city **health departments.** S. 40, proposes the enactment of a **hospital licensing law.**

MEDICAL NEWS

CALIFORNIA

Society News.—The Los Angeles Society of Allergy recently elected Drs. M. Coleman Harris as president and Dr. Elizabeth A. Sirmay as secretary.——The California Physicians Art Association has elected Dr. Ellsworth F. Quinlan, San Francisco, president, and Dr. Francis H. Redewill, San Francisco, secretary-treasurer.

Fellowship in General Practice.—The Moore-White Clinic, Los Angeles, is receiving applications for the 1951 Fellowship in General Practice designed to offer advanced training in medicine and surgery for recent graduates planning to enter general practice. The period of appointment is for one year, beginning July 1 of each year. The stipend will be $3,000 per annum and transportation allowance. Requisites of candidates include graduation from a class A medical school, one year's internship and license to practice medicine in California. Information may be obtained from the Committee on Fellowships, the Moore-White Clinic, 511 South Bonnie Brae Street, Los Angeles 5.

DISTRICT OF COLUMBIA

Open Epilepsy Clinic.—An epilepsy clinic has been opened at Georgetown University Medical Center. The services of the new clinic are available to the public at a minimal fee. A staff of specialists from the Medical Center's department of neurology directs the work. They include Drs. Francis M. Forster, Pearce Bailey and Richard G. Berry. Patients desiring treatment are requested to report to Georgetown University Hospital, 3800 Reservoir Road, N. W., from 8: 30 to 9: 30 Saturday mornings.

ILLINOIS

Basic Science Course.—This course in specialty training will be given by the University of Illinois College of Medicine, Postgraduate Division, for three quarters (nine months) beginning the first week in October. Tuition is $200 a quarter. The course is designed to review the preclinical sciences against the student's background of undergraduate medical education and internship and to supplement the clinical experience obtained in residency training programs. Applicants must be graduates of class A medical schools, and registration is limited to 28. Application for admissions must be in the Dean's office by July 1. The course comes under the provisions of the G. I. Bill of Rights, Public Bill No. 346.

Chicago

Personal.—Dr. W. W. Bauer, director, Bureau of Health Education of the American Medical Association, Chicago, and editor of *Today's Health*, has been made an associate fellow in the American Academy of Physical Education.

Anesthesiologists Meet with Heart Association.—A joint meeting of the Chicago Society of Anesthesiologists and the Chicago Heart Association will be held at 8:00 p. m. March 13 at the University of Illinois Research and Educational Hospitals. Five papers will be presented on the scientific program.

Physical Medicine Program.—At the February 28 meeting of the Chicago Society of Physical Medicine and Rehabilitation at 8: 00 p. m. in the medical amphitheater of Cook County Hospital Dr. Disraeli W. Kobak will speak on "Endogenous Effect of Short Waves on the Hormone State." From 2: 00 to 4: 00 p. m. there will be a clinical demonstration of electrophoresis for relief of pain, spasm and vascular disturbances given by Dr. Kobak and the nursing staff of the department of physical medicine at the hospital. Physicians and other professional personnel and their guests are welcome.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.

KENTUCKY

Dr. Lyon Resigns.—Dr. Addie M. Lyon, Frankfort, has resigned as commissioner of welfare and as director of the Division of Hospitals and Mental Hygiene of the State of Kentucky. He will retain, however, his position as superintendent of Central State Hospital at Lakeland.

County Society Officers Conference.—The Kentucky State Medical Association will hold its first County Society Officers Conference at the Brown Hotel, Louisville, March 1. Officers, chairmen of the public relations and legislative committees of each county medical society, the chairmen of all association committees and officers of the association have been invited. Guest speakers will be Mr. Charles S. Nelson, Columbus, executive secretary, Ohio State Medical Association, and Dr. Joseph S. Lawrence, Washington, D. C., director, American Medical Association Washington Office, whose subjects will be, respectively, "Technics for Passing Legislation" and "As Seen from Washington." The question and answer period will be conducted by Dr. Carl C. Howard, Glasgow, chairman of the council, as moderator, and councilor district conferences will be led by district councilors. Greetings from the American Medical Association will be presented by its president, Dr. Elmer L. Henderson, Louisville. Other speakers will be: Dr. George F. Lull, Chicago, Secretary and General Manager of the American Medical Association, "What Your American Medical Association Means to You"; Dr. R. Haynes Barr, Owensboro, "Public Relations in Kentucky," and Mr. Ray E. Smith, Indianapolis, executive secretary, Indiana State Medical Association, "Indiana's Public Relations Program." Dr. Hugh L. Houston, Murray, speaker of the house of delegates, will conduct the question and answer period in the afternoon.

MASSACHUSETTS

Public Seminars on Blood.—Leading scientists studying blood will join in a series of public seminars on "Blood Cells and Plasma Proteins: Their State in Nature" at Harvard University, Boston, during February, March and April. Nine Thursday meetings, each beginning at 4: 30 p. m., in Harvard Hall, will include presentations by members of the university laboratory staff and discussions by visiting specialists. The seminars are sponsored by the Harvard University Laboratory of Physical Chemistry Related to Medicine and Public Health.

The remaining program for the seminars, which began February 1, is as follows:

March 8, Components of Human Blood Concerned with Immunity; Antibodies and the Components of Complement. Presentation: Dr. Charles A. Janeway, John F. Enders, Ph.D., and John L. Oncley, Ph.D.; discussion: Michael Heidelberger, Ph.D., New York, and Dr. William E. Ehrich, Philadelphia.

March 15, The Red Cells of Human Blood; Their Origin, Properties and Functions. Presentation: Drs. John G. Gibson II, Carl W. Walter, Charles P. Emerson Jr. and Edward S. Buckley Jr.; discussion: Orville F. Denstedt, Ph.D., Montreal.

March 22, The Leukocytes and Platelets of Human Blood: Their Origin, Properties and Functions. Presentation: Dr. James L. Tullis, Boston; discussion: Dr. Charles A. Doan, Columbus, Ohio.

March 29, The Enzymes of the Blood Cells. Presentation: Dr. Burton Chance, Philadelphia, and Dr. Denstedt; discussion: Dr. Eric G. Ball.

April 5, The Enzymes of Plasma. Presentation: Drs. Douglas M. Surgenor, Ray K. Brown and Margaret J. Hunter; discussion: Joseph S. Fruton, Ph.D., New Haven, Conn.

April 12, The Lipoproteins of Human Blood. Presentation: Drs. Oncley and Frank R. N. Gurd; discussion: Dr. J. Folch-Pi and Dr. John W. Gofman, San Francisco.

April 26, The Interactions of Plasma Proteins with Metals, Carbohydrates, Drugs and Other Organic Molecules. Presentation: Dr. Walter L. Hughes Jr. and Philip E. Wilcox; discussion: Dr. George Scatchard, Ph.D., Boston.

Dunham Lectures.—The Edward K. Dunham Lectures for the Promotion of the Medical Sciences will be given at Harvard University by Dr. A. Hugo Theorell, professor and director of the Medical Nobel Institute, department of biochemistry, Stockholm, Sweden. The first lecture will be given February 27

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on the rate of incorporation of isotopic iron into different hemoproteins, the second on March 1 on "Magnetochemical and Other Investigations on Myoglobin" and the third on March 6 on "Kinetics and Mode of Action of Alcohol Dehydrogenase." All will be held at 5:00 at the Harvard Medical School Amphitheater, Building D. The Dunham lectures were established in 1923 and are open to faculty and students of the Harvard Medical School and College and other interested professional persons.

MICHIGAN

Personals.—Dr. Solomon J. Axelrod, formerly medical officer in charge of the Michigan Rapid Treatment Center, Ann Arbor, has been appointed resident lecturer in public health economics at the University of Michigan School of Public Health.

Continuation Courses at Wayne.—Wayne University College of Medicine is offering postgraduate continuation courses open to all qualified persons for March 12-June 9. The series includes anatomy, microbiology, physiological chemistry, physiology, pathology, dermatology, internal medicine and surgery. Registration can be made in the office of Postgraduate Medical Education at the College of Medicine, 1512 St. Antoine, before March 10.

Course in Cancer Detection.—Wayne University College of Medicine, Detroit, offers a postgraduate course in the early detection of cancer. Three facilities of the college are to be used throughout the year in the presentation of the course: The Yates Memorial Clinic at 4811 John R., Detroit, the City of Detroit Receiving Hospital and the Veterans Administration Hospital, Dearborn. The course may be taken for the entire year of three quarters or any one quarter may be elected. The third quarter is from March 12 to June 9, the first quarter September 10 to December 1 and the second quarter December 3 to March 8. Those wishing to be enrolled for the spring quarter of 1951 must register before March 10. Tuition is $50 per quarter, and the class is limited to 15.

State Industrial Health Day.—The Second Michigan Industrial Health Day program will be held April 4 at the Rackham Memorial Building, Detroit. It is being sponsored by the Michigan Association of Industrial Physicians and Surgeons, the state medical society, University of Michigan, Wayne University, Michigan Health Department, State Association of Industrial Nurses and State Industrial Hygiene Society. Visiting speakers include:

Harry E. Mock Jr., Chicago, New Developments in Industrial Surgery.
Alfred W. Pennington, Wilmington, Del., The Rising Toll of Obesity in Industry.
Oscar A. Sander, Milwaukee, Beryllium Poisoning.
Robert C. Page, New York, International Industrial Medicine.
George A. Hardie, U. S. Atomic Energy Commission, Washington, D. C.
Charles L. Dunham, Washington, D. C., Management of Injuries.
James H. Sterner, Rochester, N. Y., Specific Problems for the Industrial Physician.

The Michigan Association of Industrial Physicians and Surgeons will hold its annual business meeting at 4:30. After the annual banquet at 7:00 p. m. Lillian M. Gailbreth, LL.D., consulting industrial engineer, Montclair, N. J., will speak on "The Industrial Worker's Better World."

NEW JERSEY

Dr. Sarett Wins Award for Synthesizing Cortisone.—Lewis H. Sarett, Ph.D., of Merck & Co., Inc., the chemist who developed a method that yielded cortisone in quantities for commercial production, has been chosen to receive the Leo Hendrik Baekeland Award of the American Chemical Society's North Jersey Section for 1951. The Baekeland Award, which consists of a gold medal and $1,000 is sponsored by the Bakelite Division, Union Carbide and Carbon Corporation, and is conferred biennially on an American chemist under 40 in recognition of accomplishments in pure or industrial chemistry. Presentation of the 1951 award to Dr. Sarett will be made at a dinner in Newark on April 23.

NEW MEXICO

Fatal Case of Plague.—The medical officer in charge of the Communicable Disease Center activities in San Francisco has reported to the U. S. Public Health Service that the auxiliary gland and venous blood from a fatal case of bubonic plague was proved plague infected. The patient resided in Hobbs, Lea County. He had shot and dressed eight rabbits on January 2, became ill on January 6, consulted a physician on January 9 and died the same day. In January 1950 a case of bubonic plague was reported in the same county and a similar history was obtained, namely, infection followed when a hunter shot and cleaned cottontail rabbits. This patient was treated with streptomycin and sulfadiazine and recovered.

NEW YORK

Public Health Appointment.—Dr. Anne M. Bahlke, assistant director, Bureau of Medical Rehabilitation, Division of Medical Services of the State Department of Health, has been appointed acting director of the bureau, succeeding Dr. Leon Sternfeld, who resigned.

New York City

Elsberg Lecture.—Dr. Byron P. Stookey of the Neurological Institute and College of Physicians and Surgeons, Columbia University, will deliver the Charles A. Elsberg Lecture of the New York Society of Neurosurgery March 20 at 8:30 p. m. at the New York Academy of Medicine. Dr. Stookey has chosen as his subject "Early Neurosurgery in New York—Its Origin in Neurology and General Surgery."

Society News.—The February Tumor Conference of the City of New York Department of Hospitals will be held February 28 at 11:00 a. m. in Harlem Hospital's Women's Pavilion. Dr. Milton Friedman, assistant professor of clinical radiology at New York University-Bellevue Medical Center, will speak on "A New Technic for the Treatment of Cancer of the Bladder." Discussion will be led by Dr. Norman F. Laskey, attending urologist at the hospital.

Appoint Director of Health Education.—Morey R. Fields, Ed.D., associate professor of education and director of health education curriculums in the School of Education of New York University since 1946, has been named director of the Bureau of Public Health Education of the New York City Department of Health. He will also direct the department's civil defense educational program. This will include training of professional and volunteer groups in the medical and public health aspects of emergencies involved in civil defense. Directorship of the bureau was last held by Dr. George Rosen, who left the post Sept. 15, 1950 to become associate director of the Health Insurance Plan of Greater New York.

OREGON

Ophthalmology and Otolaryngology Convention.—The Oregon Academy of Ophthalmology and Otolaryngology will hold its annual postgraduate convention March 26-30 at the University of Oregon Medical School, Portland. Guest speakers will be Dr. Richard G. Scobee, assistant professor of ophthalmology, Washington University School of Medicine, St. Louis; Dr. Theodore E. Walsh, professor of otolaryngology, Washington University School of Medicine, St. Louis; Dr. F. Bruce Fralick, professor of ophthalmology, University of Michigan Medical School, Ann Arbor; Dr. Maurice H. Cottle, professor of otolaryngology, Chicago Medical School. Dr. Fralick will deliver the second annual John E. Weeks Memorial Lecture in Ophthalmology on March 26 at 8:00 p. m.. The annual banquet will be at the Columbia Edgewater Country Club March 28, at 7:00 p. m.

PENNSYLVANIA

Society News.—A meeting of the Reading Eye, Ear, Nose and Throat Society was held January 24 in Reading. Dr. A. Spencer Kaufman, clinical professor of otology and acting head of the department, Jefferson Medical College Hospital, Philadelphia, spoke on "Office Management of Chronic Otitis Media." A study club was conducted on common eye injuries. Instructors were Drs. Carroll R. McClure of West Chester and Harold L. Strause of Reading.

Spring Postgraduate Program.—General practitioners registered with the Graduate Education Institute are reminded that the state medical society's spring program opens in April in 10 teaching centers to continue the intensive five year program of 20 special courses planned to keep physicians up to date on the progress in medicine. Doctors may register for the spring course of five weeks for $15 either at the nearest teaching center on opening day or by writing to the Commission on Graduate Education, 230 State Street, Harrisburg. A schedule of subjects and lecture days at each center may be obtained from the headquarters building, Harrisburg. The special course in electrocardiography, which has been oversubscribed for the past two years, is being continued this year, beginning May 10.

Coordinate Care for the Handicapped.—The Co-ordinating Committee for the Handicapped in Pennsylvania was formed at a meeting in Harrisburg January 21. The meeting was called by the Commission on Physical Medicine and Rehabilitation of the Medical Society of the State of Pennsylvania, and the groups attending included the state division of the National Foundation for Infantile Paralysis, the State Society for Crippled Children and Adults, the State Department of Health and the Pennsylvania Bureau of Vocational Rehabilitation. Plans were made to coordinate the services of all in the interest of better care for the handicapped. Dr. Albert A. Martucci, Philadelphia, chairman of the state medical society's Commission on Physical Medicine, was elected chairman of the coordinating committee; Henry Jablonski, Harrisburg, field director of the Pennsylvania Society for Crippled Children and Adults, is the secretary. The next meeting will be held in May in Harrisburg.

Philadelphia

Annual Course in Chest Diseases.—The annual Postgraduate Course in Diseases of the Chest, sponsored by the American College of Chest Physicians, Pennsylvania Chapter, and the Laennec Society of Philadelphia, will be presented at the Hotel Warwick, Philadelphia, March 26-30. The course will emphasize the recent developments in all aspects of the diagnosis and treatment of chest disease. It is open to all physicians; however, the number of registrants will be limited. The tuition fee is $50. Applications, accepted in the order in which they are received, should be sent to the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10.

TEXAS

Medical Meetings.—The Texas Mental Hygiene Society will meet in Galveston March 8-9. Chancellor James P. Hart of the University of Texas will be the speaker at the annual dinner on March 9. Dr. Raymond H. Rigdon, Galveston, will discuss "Consideration of the Pathological and Physiological Changes in the Host of Malaria" on February 27 in the last of a series of special seminars on malaria by the University of Texas Medical Branch, Galveston.

Spring Clinical Conference.—The annual Spring Clinical Conference of the Dallas Southern Clinical Society will be held March 26-29 at the Hotel Adolphus and Baker Hotel in Dallas. Guest speakers include:

Allan C. Barnes, Columbus, Ohio, Dietary Management of the Pregnant Patient.
Katherine Dodd, Cincinnati, Virus Pneumonia in Childhood.
Austin I. Dodson, Richmond, Va., Treatment of Urinary Tract Infections.
Aubrey O. Hampton, Washington, D. C., Value of Early Roentgen Examination Following Massive Gastrointestinal Hemorrhage.
J. Deryl Hart, Durham, N. C., Carcinoma of the Stomach.
Peter C. Kronfeld, Chicago, Ophthalmologic Urgencies and Emergencies.
Gordon K. Moe, Syracuse, N. Y., Mechanism of Ventricular Fibrillation, with Particular Reference to Cyclopropane.
Arthur W. Proetz, St. Louis, Effects of Thyroid Deficiency on the Nose.
Dickinson W. Richards Jr., New York, Mechanics of Respiration, Normal and Abnormal.
Robert L. Sanders, Memphis, Tenn., Gallbladder and Duct Problem.
Francis E. Senear, Chicago, Acute Disseminated Lupus Erythematosus.
William A. Sodeman, New Orleans, Tobacco and the Circulation.

Panel discussions will be held on Wednesday from 3: 00 to 5: 15 p. m. Subjects include management of acute and chronic heart failure, intestinal obstruction, problems encountered in eye, ear, nose and throat office practice, peptic ulcer, nonoperative treatment of the surgical patient, everyday gynecologic and urologic problems. There will also be evening sessions. The annual clinic dinner will be held on Thursday. Round-table luncheon conferences on medical service; eye, ear, nose and throat; pediatrics, and neurology will be held.

VIRGINIA

Narcotic Violation.—Dr. John D. Foltz, Richmond, pleaded guilty to an indictment charging violation of the federal narcotic laws in the U. S. District Court of Richmond, and on January 18 he was fined the sum of $1,000.

Drs. Feller and Cawley Head Departments.—A new department of microbiology has been established at the University of Virginia Department of Medicine, Charlottesville, for instruction and research in infectious diseases. Dr. Alto E. Feller, associate professor of preventive medicine at Western Reserve University, Cleveland, has been appointed professor and chairman of the department. Dr. Edward P. Cawley, assistant professor of dermatology and syphilology at the University of Michigan, Ann Arbor, has been appointed professor and chairman of the department of dermatology and syphilology to succeed Dr. Dudley C. Smith, who died Aug. 30, 1950. Dr. Clayton E. Wheeler, instructor at the University of Michigan, Ann Arbor, has been appointed assistant professor of dermatology and syphilology. He succeeds Dr. Robert C. Thompson, who resigned January 1 to enter practice in Chattanooga, Tenn. Dr. Richard J. Ackart, assistant director of the Johns Hopkins Hospital, Baltimore, has been appointed director of the University of Virginia Hospital, Charlottesville, effective February 1. Dr. Herbert W. Park, formerly a Baruch Fellow in physical medicine, has been appointed assistant professor of physical medicine at the University of Virginia. He will serve as medical director of the Woodrow Wilson Rehabilitation Center and director of physical medicine at the University of Virginia Hospital.

WASHINGTON

County Doctor's Hospital Fund.—The Pierce County Medical Society has available a "Doctor's Hospital Fund," which is to be used for paying hospital bills for doctors' families while the doctors are serving in the armed forces. The fund was started in October 1942 by voluntary monthly assessment of $2 from those doctors in the county not in uniform. Contributions were discontinued Jan. 1, 1944. The fund now amounts to almost $2,000 and will be added to if the need arises.

WEST VIRGINIA

Heart Clinic Needs More Patients.—The West Virginia Heart Association has announced that the clinic maintained in Charleston can care for considerably more cardiac patients than were seen during 1950. The record shows that during 1950 to mid-December only four patients were referred to the clinic by physicians located in Charleston and 19 from the county outside of Charleston. The clinic is maintained for the treatment and diagnosis of patients residing in all southern West Virginia; however, just three cases from outside Kanawha County have been referred by physicians during the past year. All indigent patients are eligible for treatment and diagnosis. Appointments are made directly with the Kanawha-Charleston Health Department.

WISCONSIN

Trudeau Society Meeting.—The Wisconsin Trudeau Society, medical section of the Wisconsin Anti-Tuberculosis Association, will convene at Marquette University March 31 in connection with a postgraduate course in pulmonary diseases. Physician speakers will be:

David T. Smith, Durham, N. C., Moniliasis and Its Treatment.
H. McLeod Riggins, New York, Studies on Pathologic Physiology of Tuberculous Cavities.
William H. Oatway Jr., Los Angeles, Calif., An Expanded Use of Streptomycin and PAS.
Norman L. Wilson, Brookline, Mass., Surgical Developments in the Treatment of Tuberculosis.
Wilson Weisel, Milwaukee, Perforation of the Esophagus.
Richard V. Ebert, Minneapolis, Emphysema.

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Dickinson Research Memorial.—The Planned Parenthood Federation of America has established the Robert L. Dickinson Research Memorial in honor of the late Dr. Dickinson (THE JOURNAL, January 27, page 244), who was senior vice president of the federation, to foster scientific research for improved contraceptives.

Society Elections.—Recently elected officers of the Southern Surgical Association include Dr. Frank C. Wilson, Birmingham, Ala., president; Drs. George D. Lilly, Miami, Fla. and Willard H. Parsons, Vicksburg, Miss., vice presidents; Dr. John C. Burch, Nashville, Tenn., secretary, and Dr. Carrington Williams, Richmond, Va., treasurer.

Association for Research in Ophthalmology, Inc.—The third annual meeting of the Midwest Section of the Association for Research in Ophthalmology, Inc., will be held at the University Hospitals, Iowa City, March 19. On the two days following the meeting a symposium on "External Diseases of the Eye" will be presented by the department of ophthalmology, State University of Iowa College of Medicine.

Conference on Prevention of Blindness.—The annual conference of the National Society for the Prevention of Blindness will be held in New York March 28-30 at the Hotel New Yorker. Representatives from nearly every state are expected to attend the conference. Speakers and delegates will include eye doctors, public health officials, education and nursing authorities and representatives from industry.

Second Memorial Tuberculosis Fellowship.—Funds donated to the National Tuberculosis Association by friends of the late Donald Barr, former executive of Young & Rubicam, Inc., have been used to establish a fellowship for research in tuberculosis in his memory. Mr. Barr, at the time of his death from tuberculosis in 1949, was vice president and manager of the advertising service section of the firm in Hollywood. The fellowship has been awarded for the current year to Glen Roy Gale of Durham, N. C., who will study under Frederick Bernheim, Ph.D., of Duke University School of Medicine. The Donald Barr fellowship is the second memorial one to be established by the National Tuberculosis Association from special contributions. The first was in memory of Charles Hartwell Cocke of Asheville, N. C., and is at present held by Dr. Miriam E. Brailey, Johns Hopkins University Hospital.

Surgeons Section Meeting in New Haven.—The fourth of a series of seven section meetings of the American College of Surgeons will be held in New Haven March 16-17, with headquarters at the Hotel Taft and the Sterling Law Buildings' Auditorium, Yale University. Hospital conferences will be held on both days concurrently with the medical sessions. The medical sessions will open at 8:30 mornings with the showing of medical motion pictures. Subjects under discussion include "Surgery for Peripheral Vascular Diseases," "Some Aspects of Thoracic Trauma," "Fractures About the Ankle Joint," "ACTH in the Treatment of Burns," "Modern Concepts of the Treatment of Varicose Veins," "Ulcerative Colitis," "The Role of Plastic Surgery in the Treatment of Cancer" and "Recent Trends in Anesthesiology." Afternoon panel discussions will be on "Neck Surgery," "Causes of Repeated Surgical Procedures on the Biliary Tract," "Emergencies Arising During Operation" and "Surgical Conditions of the Colon and Rectum." At 8:30 p. m. on March 17 there will be a symposium on cancer and a hospital conference.

WHO Honors Three Scientists.—In its closing session at Geneva February 6 the WHO Executive Board awarded the Darling Foundation Prize to Dr. Henry E. Shortt and Dr. Percy C. C. Garnham, both British, for their joint work on the life cycle of the malaria parasite in man and monkey. The Darling Foundation Prize which consists of a bronze medal and 1,000 Swiss francs, was set up by the League of Nations to honor malariologist S. T. Darling and last awarded in 1938. The present recipients, nominated by the WHO Expert Committee on Malaria from 14 candidates, were selected by WHO and the Darling Foundation committee. Professor Shortt is professor of protozoology at University of London and head of the department of parasitology, London School of Hygiene and Tropical Medicine. Dr. Garnham, a reader in medical parasitology at London University, spent many years in Africa, studying tropical medicine, epidemiology and malaria.

Blackwell Citations.—The Elizabeth Blackwell citations for 1951 were presented January 28 to five American women physicians for their contributions to the practice and teaching of medicine. The recipients are:

Sara M. Jordan, director of gastro-enterology at the Lahey Clinic, Boston.
Edith M. Lincoln, physician in charge of the children's chest service at Bellevue Hospital, New York.
Marion E. Manter, director of internal medicine at the New York Infirmary, New York.
Louise Pearce, pathologist and president of the Woman's Medical College of Pennsylvania, Philadelphia.
Wilhelmina A. Ragland, director of obstetrics at the New York Infirmary, New York.

The Blackwell awards were established in 1949 to commemorate the one hundredth anniversary of the graduation of Dr. Elizabeth Blackwell, the first woman to receive a medical degree in America and the founder of the infirmary. The citations were read by Dr. Leoni N. Claman, president of the Women's Medical Association of New York City.

Vaccination Requirements for Travelers.—The World Health Organization has compiled and published a list of vaccinations required by 12 countries and territories from travelers coming from abroad. The list indicates the situation as of Dec. 31, 1950. Copies of this list will be made available on request to national health administrations, port and airport health authorities, steamship navigation companies and airlines, and their agents. WHO states there is no provision in the International Sanitary Conventions making it compulsory for travelers to be vaccinated or inoculated against the diseases dealt with. However, for some years past it has been customary for sanitary administrations to request travelers coming from infected, suspected or even healthy areas to present on arrival in the country certificates of inoculation or vaccination against one or more of the following diseases: cholera, yellow fever, typhus and smallpox. Publication of the requirements enacted does not necessarily imply that they are approved by WHO. A reminder of the period of validity of certificates of vaccination or inoculation, as laid down in the 1944 International Sanitary Convention, is also included. Reckoned from the date of immunization it is 14 days to 3 years for smallpox, 7 days to 6 months for cholera, 10 days to 4 years for yellow fever and 1 year for typhus.

Influenza.—Mr. David H. Stevens, commissioner of health and welfare, Augusta, Maine, has reported a severe type of "influenza" in Jackman Plantation, a very remote, forested area in the west central part of the state-Canadian border. Sixty-seven cases were reported in a population of 100 between January 15 and 27. At Forks Plantation six cases occurred in a population of 100. Dr. Robert F. Korns, New York State Health Department, Albany, has reported 51 cases of an influenza-like infection among 369 inmates housed in one building of a state institution in Utica from January 16 to February 3. An influenza-like milk infection has also been reported to have been prevalent in Niagara during late January and early February. Excerpts from a report by Dr. Christopher H. Andrewes, World Influenza Center, National Institute for Medical Research, London, are given below. The epidemic seems to be spreading across much of Europe, but remains generally mild. Reports have been received of the isolation of virus A strains in World Health Organization influenza laboratories in France, Finland, Spain, Germany, Turkey and Israel, in addition to those reported earlier. Wherever reports are available, the strains seem to be of the A′ type. In Britain the epidemic has been spreading rather slowly through the rest of the country; deaths are now rising in the Midlands;

the incidence in London and the south is still relatively low. In Belgium the disease has been mild except in old people. In Germany the epidemic is not very extensive; some A virus is prevalent; serologic tests suggest that some B virus may be present also, but no B viruses have been isolated.

Influenza Viruses Identified.—The Influenza Information Center, National Institutes of Health, Bethesda, Md., under date of February 3, reports the isolation at Columbia Presbyterian Medical Center in New York of an A′ strain in the last part of January. M. M. Siegel of the Virus Diagnostic Laboratory at the Children's Hospital of Philadelphia, isolated an A′ strain of influenza virus from pooled throat washings secured from severe cases in young adults. The onset of these were January 28 and 29. He reports no general increase in the number of influenza cases in the Philadelphia area. The Division of Preventive Medicine, Office of the Surgeon General of the Army, reports that the Sixth Army Medical Laboratory has demonstrated a diagnostic rise in hemagglutination-inhibition titer to A and A′ types on one pair of serum specimens from a patient in Camp Cooke, Calif. Another paired serum test indicates a diagnostic rise in hemagglutination-inhibition titer for type B. This serum was from a case at Mather Air Force Base, California. The National Microbiological Institute of the National Institutes of Health reports the isolation of two strains of influenza A′ virus. One strain was from a young adult seaman on the Queen Mary which left South Hampton January 13 and arrived in New York January 18. Throat washings were taken on the day of arrival in New York. The Department of Virus and Rickettsial Diseases of the Army Medical Service Graduate School has reported the isolation of two hemagglutinating agents from an influenza outbreak at Fort Monmouth, N. J., during late January 1951. One of these agents has been identified as A type influenza in tests with human serums. In tests with highly specific rooster antiserum, this virus was shown to resemble the FM 1-50 (Cuppett) and London 1-51 viruses. The second agent has not been examined to date. A mild febrile disease with body aches and a diffuse inflammation of nasopharynx, has occurred among persons from whom these laboratory specimens were obtained.

Campaign Against Animal Diseases Transmissible to Man.—Recommendations for a worldwide campaign to combat animal diseases transmissible to man—diseases known as zoonoses—were formulated in December by a group of specialists from various countries on veterinary and public health, which met in Geneva under the joint auspices of the World Health Organization and the Food and Agricultural Organization, under the chairmanship of Sir Daniel Cabot, president of the International Office of Epizootics. The specialists group considered problems relating to over 80 of these diseases and made suggestions for the control of the more important ones.

The disease foremost on the agenda was bovine tuberculosis. The experts pointed out that in central and southern Europe the infection level in cattle might reach 60 per cent. However, in several countries, particularly the United States and Scandinavia, this has been almost eradicated through tuberculin testing and the removal of infected animals from herds. The adoption of this policy wherever suitable conditions prevailed was strongly recommended. Since Q fever has only recently been recognized as an important problem, the experts agreed first to recommend large scale surveys of its incidence in man and animals. Many gaps still remain in scientific knowledge regarding Q fever, hence no complete control program has been possible, although partial measures can be instituted. The studies recommended include laboratory research with new uniform technics in various countries where this disease is prevalent. The recommendations for the control of anthrax, common in agricultural areas and industry, include low cost vaccination programs for livestock and special procedures for handling contaminated wool, hair and hides in factories. Other experts suggested that countries should draft regulations restricting the importation of materials which might be contaminated. Similar suggestions were made regarding psittacosis which is transmitted to man by parrots, pigeons and some other birds. Concerning hydatidosis, which is transmitted by dogs and is widespread in South America, parts of Oceania and the Mediterranean coasts, the experts recommended thorough measures against infection in dogs and the elimination of stray dogs. Iceland, which once had an extremely high incidence of hydatidosis, was cited as an example to prove that the disease can be virtually eradicated through public education, inspection of all meat, limiting dog population and annual treatment of all dogs. Other animal diseases transmissible to man, including virus encephalitis, leptospirosis and tularemia, which were not considered by the experts group at its current session, will be considered at its second session early in 1952.

FOREIGN

Military Medical Journal Centennial Issue.—In the spring of this year the *Giornale di Medicina Militare* will celebrate the one hundredth anniversary of its founding. On this occasion there will be published a special commemorative issue which will contain articles by distinguished medical authorities of Italy and from abroad. Military and civilian personalities will be present at the celebration. The *Giornale di Medicina Militare* was founded in 1851 by Dr. Alesandro Riber fio Turin, the organizer of the first national Italian army, and today it is one of the oldest medical periodicals in Europe.

Conference on Malaria Control for Africa.—The first International Conference on African Malaria ended on December 9 in Kampala, Uganda, with an urgent appeal to the governments responsible for the administration of African territories for the establishment of large scale malaria control. The two hundred malaria experts present at the two week Kampala Conference strongly recommended the expansion of research on African malaria, especially research concerning new antimalaria drugs, new insecticides and the benefits of control measures in highly malarious regions. The conference, which met under the chairmanship of Prof. N. H. Swellengrebel, director of the Institute of Tropical Medicine, Amsterdam, was jointly sponsored by the World Health Organization and the Commission for Technical Co-operation in Africa South of the Sahara.

International Anti-Venereal Disease Commission.—An International Anti-Venereal Disease Commission of the Rhine was created January 27 by the World Health Organization's executive board at its session at Geneva. This, the first intergovernmental commission established within the framework of WHO, includes Belgium, France, the Netherlands and Switzerland. The German federal government will be represented by observers. The administrative center for the commission will be at Strasbourg and the technical and medicosocial secretariat will be established at Rotterdam. The commission's functions will be to coordinate anti-venereal disease services of five Rhine border countries for the benefit of Rhine boatmen and to establish a network of diagnostic treatment centers at the principal river ports. The commission's services will include medical examination, treatment and hospitalization, regardless of the patient's nationality, the distribution of individual treatment cards, international tracing of infectious contacts and social services. WHO's board said that the Rhine commission will be followed by other WHO-sponsored agencies fighting against the spread of venereal diseases along inland waterways and through maritime ports.

DEATHS IN OTHER COUNTRIES

Sir Lenthal Cheatle, F.R.C.S., who had been identified with Kings College Hospital for over half a century; died January 2, aged 85. When he retired from the active staff in 1930, he was appointed a consulting surgeon at the hospital and an emeritus lecturer on clinical surgery in the medical school. Sir Lenthal came into close association with Lister, who occupied the chair of surgery at the college; in fact, he assisted Lister in the last operation that he performed.——**G. R. Girdlestone,** F.R.C.S., who played a leading part in the advancement of orthopedic surgery in England, died December 30, aged 69. In 1937 he was appointed to the first chair of orthopedics to be established in England, the Nuffield professorship of orthopedics at Oxford. In 1942 he was president of the British Orthopaedic Association.

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MEETINGS

ANNUAL CONGRESS ON INDUSTRIAL HEALTH, Atlanta Biltmore Hotel, Atlanta, Ga., Feb. 26-28. Dr. Carl M. Peterson, 535 N. Dearborn St., Chicago 10, Secretary.

ALABAMA, MEDICAL ASSOCIATION OF THE STATE OF, Mobile, April 19-21. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery, Secretary.

AMERICAN ACADEMY OF FORENSIC SCIENCES, Drake Hotel, Chicago, March 1-3. Prof. Ralph F. Turner, Michigan State College Dept. of Police Administration, East Lansing, Mich., Secretary.

AMERICAN ACADEMY OF GENERAL PRACTICE, San Francisco, March 19-22. Mr. Mac F. Cahal, 406 W. 34th St., Kansas City 2, Mo., Executive Secretary.

AMERICAN ACADEMY OF NEUROLOGY, Cavalier Hotel, Virginia Beach, Va., April 11-13. Dr. Joe R. Brown, Mayo Clinic, Rochester, Minn., Secretary.

AMERICAN ASSOCIATION FOR THORACIC SURGERY, Atlantic City, April 16-18. Dr. Brian Blades, 901 Twenty-Third St. N.W., Washington 7, D. C., Secretary.

AMERICAN ASSOCIATION OF ANATOMISTS, Detroit, March 21-23. Dr. Normand L. Hoerr, 2109 Adelbert Road, Cleveland 6, Secretary.

AMERICAN ASSOCIATION OF RAILWAY SURGEONS, Drake Hotel, Chicago, April 3-5. Dr. Chester C. Guy, 5800 Stony Island Ave., Chicago 37, Secretary.

AMERICAN COLLEGE OF PHYSICIANS, St. Louis, April 9-13. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

AMERICAN SURGICAL ASSOCIATION, Washington, D. C., April 11-13. Dr. Nathan A. Womack, University Hospitals, Iowa City, Secretary.

CHICAGO MEDICAL SOCIETY ANNUAL CLINICAL CONFERENCE, Palmer House, Chicago, March 6-9. Dr. Walter C. Bornemeier, 30 N. Michigan Blvd., Chicago 2, Secretary.

CONFERENCE ON CHRONIC DISEASE—PREVENTIVE ASPECTS, Edgewater Beach Hotel, Chicago, March 12-14. Dr. Morton L. Levin, 535 N. Dearborn St., Chicago, Director.

GEORGIA, MEDICAL ASSOCIATION OF, Bon Air Hotel, Augusta, April 17-20. Dr. Edgar D. Shanks, 478 Peachtree St. N.E., Atlanta, Secretary.

MICHIGAN POSTGRADUATE CLINICAL INSTITUTE, Book-Cadillac Hotel, Detroit, March 14-16. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

MID-CONTINENT PSYCHIATRIC ASSOCIATION, Kansas City, Mo., March 31-April 1. Dr. Paul Hines, 2625 W. Paseo, Kansas City, Mo., Secretary.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, Hotel New Yorker, New York, March 28-30. Dr. Franklin M. Foote, 1790 Broadway, New York 19, Executive Director.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY, Municipal Auditorium, New Orleans, March 5-8. Dr. W. D. Beacham, 1430 Tulane Ave., New Orleans 12, Secretary.

NORTH PACIFIC SOCIETY OF NEUROLOGY AND PSYCHIATRY, Victoria, B. C., Canada, April 20-21. Dr. Gerhard B. Haugen, Mayer Bldg., Portland, Ore., Secretary.

SECTIONAL MEETINGS, AMERICAN COLLEGE OF SURGEONS:

Hot Springs, Va., The Homestead, Feb. 26-27. Dr. Claude C. Coleman, 1200 E. Broad St., Richmond 19, Va., Chairman.

Philadelphia, Hotel Bellevue-Stratford, March 5-7. Dr. W. Emory Burnett, 3401 N. Broad St., Philadelphia 40, Chairman.

New Haven, Conn., Hotel Taft, March 16-17. Dr. Gustaf E. Lindskog, 789 Howard Ave., New Haven, Chairman.

Portland, Ore., Multnomah Hotel, March 26-27. Dr. Louis P. Gambee, 833 S.W. Eleventh Ave., Portland 5, Chairman.

Denver, Colo., Cosmopolitan Hotel, April 5-7. Dr. Kenneth C. Sawyer, 1820 Gilpin St., Denver 6, Chairman.

SOUTHEASTERN SECTION, AMERICAN UROLOGICAL ASSOCIATION, Peabody Hotel, Memphis, Tenn., March 7-10. Dr. Russell B. Carson, Sweet Bldg., Fort Lauderdale, Fla., Secretary.

SOUTHEASTERN SURGICAL CONGRESS, Hollywood Beach Hotel, Hollywood, Fla., April 11-14. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta 3, Ga., Secretary.

SOUTHERN SOCIETY OF ANESTHESIOLOGISTS, Brown Hotel, Louisville, Ky., April 20-21. Dr. John Adriani, Charity Hospital, New Orleans 12, Secretary.

SOUTHWEST ALLERGY FORUM, San Antonio, Texas, April 8-10. Dr. Boen Swinney, 224 Medical Arts Bldg., San Antonio 5, Secretary.

TENNESSEE STATE MEDICAL ASSOCIATION, Nashville, April 9-11. Mr. V. O. Foster, 706 Church St., Nashville 3, Executive Secretary.

UNITED STATES-MEXICO BORDER PUBLIC HEALTH ASSOCIATION, Los Angeles, April 4-6. Dr. M. F. Haralson, 314 U. S. Court House, El Paso, Texas, Secretary.

International

INTERNATIONAL CONGRESS OF ORTHOPEDIC SURGERY AND TRAUMATOLOGY, Stockholm, Sweden, May 21-25. Sten Friberg, Karolinska Instituts Ortopediska Klinik, Stockholm, Congress Secretariat.

PAN AMERICAN CONGRESS ON MEDICAL EDUCATION, Lima, Peru, May 14-18. Dr. Carlos F. Krumdieck, Washington 914, Lima, Secretary General.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Various Centers, April 16-17 (Part II only), June 18-20, Sept. 5-7. Ex. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* July 20. Given simultaneously in several cities in the United States. Final date for filing application was Jan. 20. *Oral.* Coronado, Calif., April 4-7 and Memphis, Oct. 14-17. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15, Conn.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various Centers, April 5. *Oral.* New York, June 8-10. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21, N. Y.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Various centers, Oct. 15. Final date for filing applications is May 1. *Oral.* The schedule of oral examinations for 1951 has been arranged on a regional basis as follows: New Orleans, March 15-17 includes candidates from the following states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Texas. St. Louis, April 4-6 or 5-7, covering Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota and Wisconsin. Philadelphia, June, covering Beirut, Canada, Canal Zone, Connecticut, Delaware, District of Columbia, Maryland, New Jersey, Ohio, Pennsylvania, Puerto Rico, Rhode Island, Virginia and West Virginia, New York, date to be announced, covering Maine, Massachusetts, New Hampshire, New York and Vermont. San Francisco, date to be announced, Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah and Washington.

Only candidates who have not taken an oral examination can be admitted under the schedule arranged thus far.

The final date for the filing of applications for the New Orleans and St. Louis examination was Jan. 26. The closing date for the Philadelphia examination will be March 1. Dates of closing dates for the filing of applications for examinations in New York and San Francisco to be announced.

Oral examinations in the subspecialties will be held at the same time and place and on the same distribution.

Exec. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, May 1951. Sec., Dr. W. J. German, 789 Howard Ave., New Haven 4, Conn.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Oral.* New York City, May 10-16. Final date for filing application was Feb. 2. Sec., Dr. Paul Titus, 1015 Highland Building, Pittsburgh 6, Pa.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* San Francisco, March 11-15; New York, May 31-June 5; Chicago, October 8-13. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Richmond, Va., May 1-4, Chicago, Oct. 9-12. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PATHOLOGY: *Written and Oral. Pathological Anatomy and Clinical Pathology.* Cleveland, April 23-24. Final date for filing application is March 15. Sec., Dr. Robert A. Moore, 1402 S. Grand Blvd., St. Louis.

AMERICAN BOARD OF PEDIATRICS: *Oral.* New Orleans, March 2-4; Cincinnati, March 30-April 1; Atlantic City, May 5-7. Ex. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION: *Parts I and II.* Philadelphia, June 16-17. Final date for filing application is April 1. Sec., Dr. Robert L. Bennett, 30 N. Michigan Ave., Chicago.

AMERICAN BOARD OF PLASTIC SURGERY: *Oral and Written.* Chicago, June 4-6. Final date for filing application is March 15. Sec., Dr. Bradford Cannon, 330 Dartmouth St., Boston.

AMERICAN BOARD OF PREVENTIVE MEDICINE AND PUBLIC HEALTH. Biloxi, Miss., April 24-25. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

AMERICAN BOARD OF PROCTOLOGY: *Part I in Anorectal Surgery and Proctology.* Kansas City, Minneapolis, Philadelphia and San Francisco, May 12. Sec.-Gen., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: Philadelphia, June 11-12. Final date for filing application is March 1. Sec., Dr. Francis J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: *Oral.* Atlantic City, June 5-9. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written.* Various centers, March 1951. Final date for filing applications was Dec. 1, 1950. *Written.* Various centers, Oct. 1951. Final date for filing applications is July 1. Sec., Dr. J. Stewart Rodman, 225 South 15th Street, Philadelphia.

BOARD OF THORACIC SURGERY: *Oral.* New York City, April 19. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit.

AMERICAN BOARD OF UROLOGY: Chicago, Feb. 9-13, 1952. Final date for filing applications is Sept. 1. Sec., Dr. Harry Culver, 314 Corn Exchange Bldg., Minneapolis 15.

DEATHS

Craig, Charles Franklin ✠ Colonel, U. S. Army, retired, San Antonio, Texas; born in Danbury, Conn., July 4, 1872; Yale University School of Medicine, New Haven, Conn., 1894; commissioned in the Army Medical Corps in 1898, advancing through the ranks to that of colonel in 1918; pathologist and bacteriologist for Army hospitals from 1898 to 1906; member of the U. S. Army Board for Study of Tropical Diseases, 1906-1907; assistant curator, Army Medical Museum from 1909 to 1913 and curator, 1919-1920; from 1909 to 1913 assistant professor of bacteriology and clinical diagnosis, Army Medical School, Washington, D. C., where he was professor of bacteriology, parasitology and preventive medicine and director of laboratories from 1920 to 1922 and commandant and director, department of preventive medicine and clinical pathology from 1926 to 1930; associate professor of bacteriology, George Washington University School of Medicine, Washington, D. C., 1910-1911; commanding officer, department laboratory, U. S. Army, Fort Leavenworth, Kan., from 1913 to 1916 and in 1917-1918, department laboratory number 2, El Paso, Texas, 1916-1917, and army laboratory at Yale, where he organized the laboratory school, 1918-1919; medical inspector, Hawaiian Department, U. S. Army from 1922 to 1926; assistant commandant, Army Medical Center, Washington, D. C., 1930-1931; served as consultant in tropical diseases for the 4th Army Area medical laboratory in Fort Sam Houston; in 1922 was awarded the Distinguished Service Medal; retired Oct. 31, 1931 from the army at his own request, after a service of thirty-three years; named professor of tropical medicine and director of the department at Tulane University of Louisiana School of Medicine in 1931 and at the graduate school of medicine in 1935; became professor of tropical medicine emeritus on Sept. 1, 1938; past president of the American Society of Tropical Medicine, American Society of Parasitologists and the American Academy of Tropical Medicine, which in 1943 awarded him the Theobold Smith Gold Medal of the George Washington University School of Medicine, Washington, D. C.; life fellow of the Association of Military Surgeons of the United States and in 1948 received its Founder's Medal; for his distinguished work in science, in 1941 received the first Franklin Medal presented by the Scientific Society of San Antonio; fellow of the American College of Surgeons, American College of Physicians and the American Public Health Association; member of the Royal Society of Tropical Medicine and Hygiene, Washington Academy of Sciences, American Society of Clinical Pathologists, International Leprosy Association, Society of Tropical Medicine and Hygiene of Egypt, International Society of Tropical Medicine, serving as secretary of the division of research, and honorary member of the Bexar County Medical Society in Texas; member of the Alpha Omega Alpha, Sigma Xi and Nu Sigma Nu; president of the Yale Medical Alumni Association, 1910-1911; received an honorary D.Sc. degree from Tulane University of Louisiana, New Orleans, in 1945; served as editor of the *American Journal of Tropical Medicine* and associate editor of the *American Journal of Parasitology;* author of "Estivo-Autumnal Malarial Fevers," "Parasitic Amoebae of Man," "The Wassermann Test," "A Manual of the Parasitic Protozoa of Man," "Clinical Parasitology" with Ernest C. Faust, the "Laboratory Diagnosis of Protozoan Diseases"; also wrote chapters in Osler's "Modern Medicine" (1907, 1914), in Hare's "Modern Treatment" (1911), Musser's "Internal Medicine" (1932), Brennemann's "Pediatrics" (1935), Reimann's "Treatment in General Medicine" (1939), Barr's "Modern Medical Therapy in General Practice" (1940), Blumer's "Therapeutics of Internal Diseases" (1941) and Bercovitz' "Clinical Tropical Medicine" (1944); died in the Brooke Army Hospital December 9, aged 78, of acute peritonitis and intestinal obstruction.

✠ Indicates Fellow of the American Medical Association.

Freeman, George Herman ✠ Warm Springs, Mont.; born in Perham, Minn., Jan 5, 1884; Universtiy of Minnesota College of Medicine and Surgery, Minneapolis, 1905; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association, Minnesota State Medical Association and the American College of Hospital Administrators; superintendent of the Montana State Hospital; for many years superintendent of the St. Peter State Hospital in St. Peter, Minn.; formerly assistant superintendent and superintendent of the Willmar Hospital in Willmar, Minn.; at one time psychiatrist to the state board of parole in St. Paul; served as professorial lecturer at the University of Minnesota Medical School, Minneapolis; died in Butte, December 2, aged 66, of cerebral hemorrhage.

Gustafson, Paul ✠ Boston; born in Arlington, Mass., in 1889; Harvard Medical School, Boston, 1916; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the American College of Surgeons; member of the New England Obstetrical and Gynecological Society, New England Pediatric Society and the Obstetrical Society of Boston, of which he was president in 1948; served overseas during World War I; instructor in obstetrics at his alma mater; affiliated with Mount Auburn Hospital, Cambridge, Boston Lying-in Hospital and Massachusetts General Hospital; consulting obstetrician at Winchester Hospital, Winchester, Emerson Hospital, Concord, Brockton Hospital, Brockton; died in the Phillips House, Massachusetts General Hospital, November 25, aged 61, of coronary thrombosis.

Browne, Lewis Edwin Joel ✠ Colonel, U. S. Army, retired, Boulder, Colo.; born in Lewistown, Mo., July 12, 1890; University of Illinois College of Medicine, Chicago, 1916; during World War I served with the Fourth Division, and was with the Army of Occupation in Germany after the armistice; later saw service in Panama, and in Iceland in World War II, where he served with the First Task Force; at the time of his retirement April 30, 1945, for disability in line of duty, was in command of the Army Hospital at Fort Crockett, Galveston, Texas; fellow of the American College of Surgeons; member of the Association of Military Surgeons of the United States; died in Fitzsimons Army Hospital, Denver, November 17, aged 60, of carcinoma of the bronchus.

Crebbin, Alexander Ramsay ✠ New Orleans; University of Michigan Homeopathic Medical School, Ann Arbor, 1912; assistant professor of clinical ophthalmology at the Tulane University of Louisiana School of Medicine; specialist certified by the American Board of Opthalmology; member of the American Academy of Ophthalmology and Otolaryngology; senior surgeon at the Eye, Ear, Nose and Throat Hospital and Touro Infirmary; formerly senior visiting surgeon on the staff of Charity Hospital; died December 18, aged 60, of coronary occlusion and general arteriosclerosis.

Mace, Charles Herbert, West Springfield, Mass.; Baltimore Medical College, 1900; member of the American Medical Association; at one time practiced in Huntington, where he served on the board of health and the school committee and was school physician; for many years medical examiner for Hampshire County; served as chairman of the board of health in West Springfield and as school physician; affiliated with the staff of the Springfield (Mass.) Hospital; for many years surgeon for the Boston and Albany Railroad; died December 10, aged 79, of arteriosclerosis.

Bowcock, Charles M., Dallas, Texas; Jefferson Medical College of Philadelphia, 1882; honorary member of the Medical Association of Georgia; member of the American Medical Association; formerly practiced in Springfield, Ill., where he was president of the Sangamon County Medical Society and president of the medical staff of St. John's Hospital; died November 29, aged 92, of arteriosclerotic heart disease.

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Bramlett, Eugene Sherman ⊕ Oxford, Miss., Kentucky University Medical Department, Louisville, 1905; for many years county health officer and president of the school board; associate in clinical medicine at the University of Mississippi School of Medicine in University; founder and owner of the Bramlett Hospital; vice president and director of the First National Bank; died December 11, aged 70, of coronary thrombosis.

Brophy, Edward Joseph, Norwich, Conn.; Yale University School of Medicine, New Haven, 1904; member of the American Medical Association; served as health officer; died recently, of heart disease.

Brown, George William, Tyronza, Ark.; University of Arkansas School of Medicine, Little Rock, 1910; died December 6, aged 67, when the motor boat in which he was duck hunting sank.

Bushong, Corinne, Tompkinsville, Ky.; University of Louisville School of Medicine, 1940; member of the American Medical Association; died recently, aged 38.

Clarkson, Addie W., Valliant, Okla.; Medical Department of Tulane University of Louisiana, New Orleans, 1894; formerly associated with the Indian Service; died November 6, aged 81, of heart disease.

Claypool, John Rowan, Franklin, Ky.; University of Nashville Medical Department, 1889; Vanderbilt University School of Medicine, Nashville, Tenn., 1889; died December 5, aged 88.

Culbertson, Lewis Rogers, Zanesville, Ohio; Jefferson Medical College of Philadelphia, 1890; member of the American Academy of Ophthalmology and Otolaryngology; eye and ear surgeon for the Pennsylvania Railroad; on the staff of the Good Samaritan Hospital, where he died December 5, aged 83.

Dillard, Joseph Asbury, Columbia, S. C.; Emory University School of Medicine, Atlanta, 1916; member of the American Medical Association; served during World War I; died November 30, aged 60, of coronary thrombosis.

Drane, Miriam Magruder ⊕ St. Petersburg, Fla.; University of Tennessee College of Medicine, Memphis, Tenn., 1926; died November 28, aged 57, of subarachnoid hemorrhage, arteriosclerosis and hypertension.

Droll, George Amos, Madison College, Tenn.; Cooper Medical College, San Francisco, 1900; served on the staff of the Madison Rural Sanitarium and Hospital, where he died November 28, aged 86, of myocardial infarction and generalized arteriosclerosis.

Easterday, Carroll Edward Lee ⊕ Walkersville, Md.; Medical College of Virginia, Richmond, 1935; served as city and county health officer for Frederick County and deputy of the state department of health; on the staff of Frederick Memorial Hospital; died in York, Pa., December 9, aged 42, of coronary thrombosis.

Emery, Charles Howard ⊕ Bedford, Ind.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1892; past president of the Lawrence County Medical Society; an Associate Fellow of the American Medical Association and a member of its House of Delegates in 1905 and 1906; vice president and director of the Citizens National Bank; died November 20, aged 83, of hypostatic pneumonia and diabetes mellitus.

Francis, Frederick William ⊕ Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, 1914; served during World War I; died in All Saints Hospital December 2, aged 58, of esophageal hemorrhage and cirrhosis of the liver.

Frenzel, Walter Charles ⊕ Wausau, Wis.; University of Illinois College of Medicine, Chicago, 1924; served during World War I; member of the surgical board of St. Mary's Hospital; since 1939 chairman of St. Mary's Nursing School, where he was instructor in gynecology from 1926 to 1949; died November 26, aged 51, of cardiac asthma and myocardial degeneration.

Gaines, Thomas Hiram, Elberton, Ga.; Chattanooga (Tenn.) Medical College, 1903; member of the American Medical Association; died in the Anderson Memorial Hospital, Anderson, S. C., recently, aged 73, of uremia.

Garcia, Alphonso G., Moosup, Conn.; University of Vermont College of Medicine, Burlington, 1921; member of the American Medical Association; died in the William W. Backus Hospital, Norwich, November 27, aged 51.

Glass, Sydney Herbert ⊕ Murfreesboro, Tenn.; Tulane University of Louisiana School of Medicine, New Orleans, 1924; served during World War I and II; medical rating specialist for the Veterans Administration in Nashville; on the staff of the Veterans Administration Hospital; died November 26, aged 52, of heart disease.

Gott, Ernest Fred, Charleston, W. Va.; College of Physicians and Surgeons, Baltimore, 1915; member of the American Medical Association; served during World War I; formerly examining physician for the Workmen's Compensation Fund; died in St. Albans December 31, aged 63, of heart disease.

Gurley, Hubert Taylor, Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1925; died recently, aged 51, of coronary thrombosis, arteriosclerosis and diabetes mellitus.

Horn, Jesse Mayo, Brownwood, Texas; Kentucky University Medical Department, Louisville, 1903; member of the American Medical Association; past president of the Brown County Medical Society; for many years city health officer; affiliated with Medical Arts Hospital; died November 11, aged 77.

Isham, LeRoy Scott, Cleveland Heights, Ohio; Detroit College of Medicine and Surgery, 1913; served on the staffs of St. Alexis Hospital and St. Luke's Hospital in Cleveland; died November 30, aged 66, of cerebral hemorrhage.

Jacobson, Benjamin ⊕ Buffalo; University of Buffalo School of Medicine, 1909; served in the eye clinic of the Children's Hospital; died November 13, aged 64, of myocarditis and arteriosclerosis.

Johnson, James Francis, Jersey City, N. J.; Howard University College of Medicine, Washington, D. C., 1905; formerly on the faculty of his alma mater; died November 25, aged 74, of coronary thrombosis.

Johnson, Wallace, Middletown, Ohio; Medical College of Ohio, Cincinnati, 1892; died in Dayton November 30, aged 83.

Karbach, Nelson William ⊕ Houston, Texas; University of Texas School of Medicine, Galveston, 1938; also a graduate in pharmacy; served during World War I; on the staff of the Memorial Hospital, where he died November 29, aged 51, of cerebral hemorrhage.

Kenney, Clarence J., ⊕ Houma, La.; St. Louis University School of Medicine, 1908; member of the Maine Medical Association and the American Trudeau Society; served overseas during World War I and was awarded the Croix de Guerre and the Purple Heart; at one time head of the division of communicable diseases of the city health department in Milwaukee; retired Nov. 11, 1949 from the Veterans Administration after serving in an administrative capacity for many years; died November 28, aged 68, of carcinoma.

Kitchens, Charles Edward, De Queen, Ark.; Memphis (Tenn.) Hospital Medical College, 1909; member of the American Medical Association; formerly vice president of the Arkansas Medical Society and councilor of the sixth district; secretary and past president of the Sevier County Medical Society; served during World War I; died November 29, aged 69, of cerebral hemorrhage.

Maple, John Lloyd, Louisville, Ohio; Vanderbilt University School of Medicine, Nashville, Tenn., 1934; member of the American Medical Association; served overseas during World War II; died November 17, aged 42.

Marquis, Robert Addison, Monaca, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1936; also a graduate in pharmacy; member of the American Medical Association; served during World War II; died November 12, aged 46, of multiple myeloma.

Porter, William Wallace, Springfield, Tenn.; University of Tennessee Medical Department, Nashville, 1893; died November 27, aged 81.

Roberts, Oscar Brown, Baldwinsville, Mass.; Medico-Chirurgical College of Philadelphia, 1899; member of the American Medical Association; member of the staff of the Henry Heywood Memorial Hospital in Gardner; died recently, aged 73, of carcinoma of the lung.

Schairer, William Waldo ✠ Coloma, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1911; served during World War I; affiliated with Mercy Hospital, Benton Harbor, where he died November 20, aged 63, of carcinoma of the liver.

Scharmann, Frank George, Johnstown, Pa.; Jefferson Medical College of Philadelphia, 1914; member of the American Medical Association; served overseas during World War I; affiliated with Memorial Hospital; died November 14, aged 59, of uremia.

Schori, John Wheeler ✠ Bellevue, Wash.; University of Illinois College of Medicine, Chicago, 1930; past president of the Panhandle Medical Association in Idaho; served on the staffs of Seattle General and Columbus hospitals in Seattle; died December 6, aged 50, of coronary thrombosis.

Schwarz, Paul Edgar, Easton, Pa.; Jefferson Medical College of Philadelphia, 1913; member of the American Medical Association and the American Association of Industrial Physicians and Surgeons; served as president of the Northampton County Medical Society; on the staff of Easton Hospital; for many years school physician; died November 18, aged 59, of coronary occlusion.

Seaton, Albert ✠ Indianapolis; Medical College of Indiana, Indianapolis, 1904; medical director, American United Life Insurance Company; died November 12, aged 70, of carcinoma of the lung.

Seelinger, George Francis, Westbury, N. Y.; Long Island College of Medicine, Brooklyn, 1937; member of the American Medical Association; served during World War II; died November 25, aged 41, of acute hemorrhagic pancreatitis.

Shumate, C. Frank, St. Petersburg, Fla.; Barnes Medical College, St. Louis, 1898; died November 16, aged 80.

Smith, Arthur Vincent, Middleboro, Mass.; Harvard Medical School, Boston, 1894; served as medical examiner of Southern Plymouth County district, as physician for the board of health and as school physician in Middleboro; died November 19, aged 82, of cerebral thrombosis and arteriosclerosis.

Smith, Richard S., Parkin, Ark. (licensed in Arkansas in 1903); member of the American Medical Association; past president of the Cross County Medical Society; formerly county health officer; for many years examiner for the Metropolitan Life Insurance Company; died in Gartly Ramsay Hospital in Memphis, Tenn., November 12, aged 75, of lobar pneumonia.

Splaine, Russell Leo, Salisbury Heights, N. H.; Tufts College Medical School, Boston, 1920; member of the American Medical Association; served during World Wars I and II; medical consultant, New Hampshire State Hospital, Concord; died in the Veterans Administration Hospital, Manchester, November 28, aged 58, of carcinoma of the lung.

Spratt, Robert Davie ✠ Passed Assistant Surgeon, U. S. Public Health Service, retired, Livingston, Ala.; Medical Department of Tulane University of Louisiana, New Orleans, 1902; joined the U. S. Public Health Service in 1904 and retired Feb. 11, 1915; formerly health officer of Sumter and Greene counties; died in Sunter County Hospital, York, November 11, aged 71, of coronary occlusion and arteriosclerosis.

Stephan, Ernest L., ✠ Hinckley, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1893; county health officer; died November 13, aged 81, of myocardial degeneration and mitral regurgitation.

Stevens, Charles Sidney, Santa Barbara, Calif.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1907; formerly coach and later physician to the Santa Barbara High School Dons; served as county health officer and surgeon for the Missouri Pacific Railway; affiliated with Santa Barbara Cottage Hospital, St. Francis Hospital and Santa Barbara General Hospital; died November 16, aged 70, of pulmonary tuberculosis.

Stevenson, Thomas Young, Sioux Falls, S. D.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; Harvey Medical College, Chicago, 1898; died in White Memorial Hospital, Los Angeles, November 30, aged 91, of intertrochanteric fracture of left femur and terminal pneumonia.

Stickley, Peter B., Stephens City, Va.; Medical College of Virginia, Richmond, 1893; member of the American Medical Association; served as county physician; died in the Maplewood Nursing Home, Winchester, November 14, aged 86, of cerebral hemorrhage.

Stout, John Phillips, Red Bank, N. J.; Cornell University Medical College, New York, 1911; member of the American Medical Association and the American Academy of Pediatrics; served overseas during World War I; affiliated with Christ Hospital and Margaret Hague Maternity Hospital; died in St. Luke's Hospital, New York, November 21, aged 60, of chronic myelogenous leukemia and arteriosclerotic heart disease.

Stream, Anthony Joseph, Colorado Springs, Colo.; Dearborn Medical College, Chicago, 1906; for many years practiced in Chicago; died November 13, aged 74, of chronic heart disease.

Stryker, Minnie, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1898; at one time a medical missionary in China; died in Hahnemann Hospital November 27, aged 81.

Sugg, William Ralph, San Antonio, Texas; Memphis (Tenn.) Hospital Medical College, 1910; died November 27, aged 71, of heart disease and Parkinson's syndrome.

Swegart, Jack Eugene, Maquoketa, Iowa; George Washington University School of Medicine, Washington, D. C., 1945; member of the American Medical Association; secretary of the Jackson County Medical Society; affiliated with the Jackson County Chapter of the National Foundation for Infantile Paralysis; served in the medical corps of the U. S. Naval Reserve during World War II; on the staff of the Jackson County Public Hospital; died in the University Hospital, Iowa City, November 12, aged 29, of poliomyelitis.

Trager, Herman, Seattle; University of Pennsylvania School of Medicine, Philadelphia, 1911; for many years associated with the Veterans Administration; died in the University of Washington Medical Center November 29, aged 64, of coronary occlusion.

Westrate, Paul, Grand Rapids, Mich.; Grand Rapids Medical College, 1901; died in Butterworth Hospital November 23, aged 82.

DIED WHILE IN MILITARY SERVICE

Wilkins, Donald Scott, Captain M. C., U. S. Army, Ames, Iowa; born in Ames, May 20, 1922; State University of Iowa College of Medicine, Iowa City, 1947; member of the American Medical Association; interned at Pennsylvania Hospital in Philadelphia; served residencies in anesthesiology at the Veterans Administration Center in Des Moines and the University Hospitals in Iowa City; certified by the National Board of Medical Examiners; entered the Medical Corps of the U. S. Army as a first lieutenant in January 1949; promoted to captain in January 1950; began active duty in Korea in July 1950; died on a hospital ship in the Pacific, October 5, aged 28, of poliomyelitis, after being stricken in Korea while serving with the 8076 Mobile Army Surgical Hospital.

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GOVERNMENT SERVICES

PUBLIC HEALTH SERVICE

How Health Officers Spend Their Time.—Public health physicians holding administrative positions in state health departments spend 70 per cent of their time in activities requiring medical judgment and 30 per cent in other types of work, according to a survey recently completed by the Public Health Service.

The survey was made because of the increasingly serious shortage of medical manpower for public health programs. All physicians in state health departments were invited to keep records of their activities over a one week period and to indicate which tasks involved medical judgment. The 173 physicians who responded represent a cross section of medical public health personnel and comprise 45 per cent of all physicians holding administrative positions in state health departments. Specific programs on which the physicians spent most time were tuberculosis, venereal disease, laboratory work, communicable disease control and cancer control. These programs accounted for 37 per cent of all time reported.

That the various health department programs are closely interwoven was indicated by reports that physicians specializing in one program were also active in many related programs. Directors of tuberculosis programs, for example, were also participating in mental health, industrial hygiene, hospital, laboratory and several other public health programs. State health officers and state directors of local health services were active in practically all of the public health programs which were included in the reports.

The majority of the physicians reported a work week of five or five and one-half days, although a few worked seven days a week. Work hours varied from six to 12 hours a day. Activities most frequently reported were, in the following order, correspondence, conferences and telephone calls. Activities taking the largest single blocks of time were travel, correspondence, research and field investigations. The tasks which they reported as not involving medical judgment dealt chiefly with purchasing supplies and with checking and supervising the use and installation of equipment.

Sources of Milk and Water for Common Carriers.—Listings showing the sanitary status of sources from which United States railroads, airlines, buses and ships normally obtain milk, ice cream and drinking water for their passengers when traveling in this country and Canada were released February 13 by the Public Health Service. The listings are expected to aid carriers to obtain these supplies only from approved sources and thus help to check the transmission of water-borne and food-borne diseases across state borders and the United States-Canadian border. The listings contain the names, locations and sanitary classification of 1,652 vessel watering points, 1,423 railroad watering points, 179 airline watering points, two bus watering points (New Orleans and Houston), 558 milk and fluid milk product sources and 286 frozen dessert sources. The latter two lists appear under one heading.

The classifications were made by the Public Health Service on the basis of reports from state health departments. Carriers, in turn, are required by Interstate Quarantine Regulations to indicate annually which sources they use and to use only those then approved by the Surgeon General of the Public Health Service. Prior to the classifications issued today, the sanitary status of these sources was established whenever individual carriers submitted them for approval. Future editions of the classifications will appear three times a year and will be dated January 1, May 1 and September 1. Copies may be obtained from the Federal Security Agency's regional offices in Boston, New York, Washington, Cleveland, Chicago, Atlanta, Kansas City (Mo.), Dallas, Denver and San Francisco.

Chief of Cancer Control Branch.—Dr. Raymond F. Kaiser has been appointed chief of the Cancer Control Branch in the National Cancer Institute of the National Institutes of Health, Public Health Service, succeeding Dr. Austin V. Deibert, who has been appointed Public Health Service liaison officer to the Economic Cooperation Administration. Dr. Kaiser will direct federal cancer control programs, including grants-in-aid to state health departments, special grants to hospitals and other institutions, provision of consultant services, development and demonstration of cancer control technics and professional education programs. Dr. Kaiser and Dr. Deibert were co-developers of the first official national cancer control program in the United States. They organized and administered the first Public Health Service program of financial assistance to medical and dental schools, under which $6,500,000 has been granted during the past three years to establish or improve cancer teaching to undergraduates. Dr. Kaiser joined the Public Health Service in 1938. He received his medical degree from the University of Colorado and a Master of Public Health degree from Harvard.

VETERANS ADMINISTRATION

The Annual Report.—The annual report of the Veterans Administration for the fiscal year ending June 30, 1950 is now available to the public through the Government Printing Office, Washington, D. C. The report shows that admissions to Veterans Administration hospitals rose to 577,715 for 1950, as compared with 554,863 for fiscal 1949. Hospital discharges numbered 577,275. The number of persons given outpatient examination by VA staff employees rose to 2,397,046, as compared with 2,365,774 for fiscal 1949. The number of persons given outpatient treatment by VA staff employees for fiscal 1950 totaled 1,181,741.

The number of living veterans receiving compensation, pensions or retirement pay on June 30, 1950 totaled 2,368,238. The number of deceased veterans whose dependents were receiving compensation or pensions on June 30, 1950 totaled 658,123. Beneficiaries under guardianship on June 30, 1950 totaled 283,836.

VA has been reducing the number of its employees and field installations every year since fiscal 1947. The number of employees on the rolls as of June 30, 1950 was 188,392 as against 216,753 on June 30, 1947.

The number of field stations on June 30, 1950 was 685 as against a peak of 1,198 on June 30, 1947. This reduction of 513 occurred despite an increase in the number of hospitals and domiciliary facilities over the same period.

Review of Research Program.—Physicians from 55 Veterans Administration hospitals in which extensive research is being conducted met in Houston, Texas, February 14-16, for the first joint review of VA's research program since it was launched nearly five years ago. Dr. Lee Cady, manager of the Houston hospital, welcomed the delegates, and Dr. Edward H. Cushing, VA's assistant chief medical director for research and education, outlined the program of the conference. Dr. A. H. Lawton, chief of the Research Division, presented requests for assistance in research from outside sources. Four sessions were set aside for the reading of scientific reports, with the first devoted to studies on the use of cortisone and pituitary adrenocorticotropic (ACTH) hormone. Four papers on bacteriology and seven papers on laboratory methods were read. Cardiovascular research reports and neuropsychiatric studies were discussed. The discussion of civil defense, including health services and radiological defense, was led by Dr. George M. Lyon, VA's chief of atomic medicine and director of the radioisotope program.

FOREIGN LETTERS

TURKEY

Antibiotic Therapy in Trachoma.—Trachoma was endemic in the eastern and southeastern provinces of Turkey before World War I, and it became epidemic as the result of troop movements through Iraq, Transjordan, Syria, Palestine and Arabia. By 1918 trachoma had become a public health problem. The first step toward its control was taken when, Dr. Kaşif Omer Baştug, an ophthalmologist, and his associates, Dr. Nuri Fehmi Ayberk and Dr. Mehmed Ali, from among the thousands of children isolated and treated more than 400 children with trachoma in eight Istanbul orphanages. In 1923 Dr. Baştug and Dr. Cansever engaged in experimental trachoma work in the rural communities of the southern province of Adana; persons with trachoma were given treatment record cards, Dr. Muhtar Berker made an index and the Ministry of Health and Social Assistance opened a trachoma clinic in the city of Adana. In 1925, under the direction of Dr. Baştug, the first thorough investigation was made in Adiyaman, an area in the province of Malatya, where one fifth of the inhabitants were blind and almost all had trachoma. A 10 bed hospital was opened in the town of Malatya, a 20 bed hospital in Adiyaman, two 10 bed hospitals in the county of Behisni and clinics in the districts. Examinations of the whole population revealed an index of 90 to 95. Five years later the index was 72 and in 1,500 children there was no evidence of trachoma. Treatment of the parents plus health education as to the prevention of the disease had been a success.

At the second national medical congress in Ankara, in 1927, trachoma was the principal subject for discussion and a campaign against it was recommended. Work was began in the areas with the highest index, the southeastern provinces of Malatya, Diyarbakir, Mardin, Urfa, Gaziantep and the southern provinces of Seyhan and Mersin, with Dr. Kaşif Baştug as director of the campaign.

The scope of the campaign was gradually widened. In 1947, there were 16 hospitals with 225 beds, 34 village units and 69 dispensaries; 96,309 suspect persons were examined; 45,311, or 55 per cent, were found to be infected and 1.5 were blind; treatment was given 6,527,455 times. In 1948 the trachoma campaign encompassed 15 provinces with 3,623,966 inhabitants, of which 1,910,632, or 47 per cent, had trachoma. There were 38 hospitals with 416 beds, 39 dispensaries and 107 village units with 49 ophthalmologists, 127 sanitary inspectors, 16 hospitals and three visiting nurses. Specially trained sanitary inspectors are now in charge of dispensaries and of village and mobile units.

Dr. Kaşif Baştug has recently reported excellent results with antibiotics; they not only prevent blindness but are much less expensive than other agents used, an important factor when millions of treatment must be given. In suppurative trachoma the sulfonamides have also proved effective. They have been applied in the form of eye drops and subconjunctival injections and by mouth. In 556 patients in the Diyarbakir, Mardin and Siirt hospitals excellent results have been obtained within three days. Formerly such patients had to be given treatment for weeks and often months. Equally good results have been obtained with penicillin. Penicillin has been given preference for hospital treatment and the sulfonamides for treatment in clinics and in the home. Recent experiments with antibiotic therapy for trichiasis, hypopyon, ulcus rodens and cataract have also led to excellent results. Adjuvants given in four periods consisted of iron, arsenic, copper and vitamins.

Q Fever Epidemiology in Turkey.—Endemic Q fever in Turkey was first diagnosed in 1948. Subsequent investigation of serums, forwarded to the Refik Saydam Institute of Hygiene in Ankara, revealed that Q fever prevailed in widely separated parts of the country. Complement fixation of 32 serums from patients with pneumonia, clearly not atypical, was positive at titers of 1:40 in 20, at 1:20 to 1:40 in six and at 1:10 in six.

In 193 different animals the complement fixation was positive at titers of 1:8, 1:16, 1:32, 1:64 and 1:128. Thirty-seven of 67 cattle, two of 41 buffalo, 31 of 49 sheep and one of 13 goats had positive reactions. Caminopetros of Greece reported that Q fever antigen had been obtained from sheep and goats imported from Turkey.

From the villages in the environs of Ankara Dr. Sabaheddin Payzin, chief of the serum control laboratory of the Refik Saydam Institute of Hygiene, collected 36 samples of milk from sheep and cows. He inoculated guinea pigs with a 2 cc. subcutaneous injection of the samples. Of the guinea pigs that within three to nine days developed a temperature of above 40 C. (104 F.) Salmonella enteritidis were recovered from three and hemolitic Streptococcus from two. Investigation of serums revealed Q fever antigen in one sheep; Rickettsia burnetii was isolated from one cow.

In patients the Q fever complement fixation was positive at titers of 1:10, 1:20, 1:40, 1:80, 1:160 and 1:320. Of 741 patients, 396 had negative reactions, 109 anticomplementary and 236 positive reactions. Of 127 normal serums, 109 gave negative reactions and 14 gave positive reactions; i. e., of a total of 868 complement fixation tests, 250 elicited positive reactions. In the Ankara and Smyrna provinces Q fever is endemic and sporadic. In 1948 a Q fever epidemic occurred in the villages of Aksaray in the central province of Nigde.

SWITZERLAND

The Nobel Prize for Medicine.—For the third consecutive year, the Nobel prize for physiology and medicine has been awarded to a Swiss researcher. In 1948, Dr. Muller (Basel) received it for his discovery of DDT; last year, Professor Hess (Zurich) was honored for his remarkable research on the diencephalon; this year, Professor Reichstein, together with Dr. Kendall and Dr. Hench of Rochester, Minn., U. S. A., has received the prize.

Professor Reichstein was born in 1897 in Wloclaveck, a small county of Poland which was at that time occupied by the Russians. When he was 11 years old, he came to Switzerland, passed his college final examinations in 1916 in Zurich, studied at the "Ecole polytechnique fédérale" in Zurich where he obtained the certificate of engineer and later of doctor in chemistry (1922). Professor Reichstein first worked in industrial chemistry; afterward, he began his academic career in the "Ecole polytechnique fédérale," where he was asked to teach in 1934. In the summer of 1938, Basel University gave him the ordinary professorship of pharmacy and, a few years later, of organic chemistry. In 1947, Professor Reichstein received the Marcel Benoit Prize, which is in Switzerland a reward of high value.

Professor Reichstein's scientific work is considerable. In 1933, he managed to solve the problem of vitamin C synthesis, a vitamin the structure of which had been discovered a short time earlier. After studying the vitamins, Professor Reichstein dealt with the hormones of the adrenal cortex. This endocrine gland is rich with hormonal substances whose chemical structure is complex. Professor Reichstein isolated over 24 substances of hormonal character and learned their chemical composition. He thus defined desoxycorticosterone, a hormone of great importance for water and salt metabolism. The discovery that enhanced his reputation these last years is of cortisone, of which the first clinical application in chronic rheumatism were made by Dr. Hench in 1949.

Professor Reichstein partly synthesized cortisone, which is of great practical importance.

American researchers try to effect complete synthesis of cortisone; Professor Reichstein, however, tries to start with sub-

The items in these letters are contributed by regular correspondents in the various foreign countries.

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stances that already give him a chemical substratum, making possible simplification of synthesis. This substratum is a type of African Strophanthus, the object of many botanical expeditions.

Endocrinologic Studies in Switzerland.—A society of endocrinology was recently founded in Switzerland, with Prof. Hubert de Watteville, head of the gynecological and obstetric clinic of Geneva University, as president and Dr. Mach, associate professor at university, as secretary. For its first meeting, at Interlaken (June 1950), the society invited Professor Thorn (Boston), who gave a remarkable lecture on cortisone and pituitary adrenocorticotropic hormone (ACTH). He reviewed all aspects of the physiopathology of the cortex of the adrenal gland, its metabolic action and its action on cells, enzymes and fibroblasts. He discussed the relations of the cortex and the posterior and anterior pituitary and the thyroid gland. He then examined the role of epinephrine and the diencephalon in reactions to stress.

In the second part of his lecture, Professor Thorn examined the different effects of pituitary adrenocorticotropic hormone and cortisone and their action in the treatment of adrenal insufficiencies, first discussing the respective utility of desoxycorticosterone and cortisone and then enumerating diseases with illustrative case histories.

In the discussion that followed, several Swiss specialists pointed out the danger inherent in the use of cortisone and pituitary adrenocorticotropic hormone in pulmonary tuberculosis, because these medicaments hinder the reaction of the organism necessary for good defense. Referring to a case of Hodgkin's disease treated with cortisone and pituitary adrenocorticotropic hormone, several speakers stated that the tumors could again become radiosensitive after such treatment.

A few weeks earlier, Professor Selye, head of the Institute for Experimental Medicine and Surgery, Montreal, Canada, came to Europe to give a series of lectures. He spoke at meetings of the medical societies in Zurich and Geneva.

Coxsackie Virus Isolated in Geneva.—In September 1950, a few definite cases of myalgia with lymphocytic meningitis appeared in Geneva. Drs. John Wirth and François Thélin, working respectively in the bacteriology laboratory and in the university clinic of pediatrics in Geneva, tried to isolate the responsible virus. The causal agent, a filtrable virus, was named Coxsackie virus. It is one of the few neurotropic viruses associated with poliomyelitis. It is pathogenic to man, is easily isolated and gives an antigen that can be used for diagnosis. The authors isolated, by blood letting, examination of feces, and throat irrigation, a filtering agent capable of paralyzing suckling mice, which provided an antigen giving the complement fixation with serums of cured patients.

LUXEMBURG

Fraternal Organization of Physicians.—The medical organization of Luxemburg conducted an inquiry among physicians which showed that the majority of the members want a reform of the organization of the medical profession. This reform would be in terms of the founding of a Fraternal Organization of Physicians, because the independence and existence of the medical profession is threatened. Along with the excessive number of physicians and the increasing encroachment by the state, the sick insurance organizations and the increasing number of home remedies seriously menace the liberty of the medical profession.

At present, medical legislation is under the control of the courts. The courts apply penalties, under the penal code, against a number of common law crimes and offences, such as abortion. These offences are dealt with under the particular legal statute for doctors. The obligation to hold secret professional confidences, the obligation of being truthful in medical certificates, the prohibition of practicing medicine by doctors who are censured, because of certain infractions of the common law, are examples of some points of this legal statute for doctors. However, the reprehensible things that the doctor can do in his practice are much more numerous than those considered in the penal code. The adjudication of the responsibility of the doctor for professional mistakes that entail damage suits is difficult for the court, because expert testimony by various doctors is often contradictory. The medical organization does not have authority for the application of effective penalties. Although a medical organization exists, it is not representative of the medical corps, which needs an organization instituted by law and in which membership is compulsory. Nevertheless, it should be independent and physicians should have a free hand in choosing its directors.

With this in mind, the establishment of a fraternal organization of physicians is proposed. The idea of an independent, compulsory, professional organization established by law is realized by the Fraternal Organization of Physicians as it now exists in Belgium and France. This organization guards over the preservation of the principles of morality, integrity and devotion indispensable to the practice of medicine and over the observation by all the members of their professional duties as well as the rules established in the code of ethics. It assures the defense of honor and the independence of the medical profession. The defense of the dignity and independence of the medical profession is the principal objective of this organization, which would have disciplinary powers based on the traditional rules of medical ethics. The penalties that the council can apply are (1) warning, (2) reprimand (formal censure pronounced by the tribunal), (3) temporary or permanent prohibition of exercising one or more of the medical functions which have been conferred by the state, the communities, social welfare organizations or sick benefit insurances, (4) temporary prohibition of the practice of medicine, not to exceed three years, and (5) cancellation of the membership diploma.

International Medical Law.—At the government's invitation and under the patronage of his Highness the Prince of Luxemburg, Dr. J. Voncken, director of the international office of military medicine, gave a series of lectures on the necessity of establishing a Code of International Medical Law for the purpose of regulating the medical profession in times of war. Recalling the work done in Geneva, by the World Medical Association and by the Monaco Commission, Dr. Voncken emphasized the importance of organizing the teaching of this international law in the entire world and of constituting a special court of justice to protect medical morals and eventually to apply penalties for violation of the humanitarian principles. It is urgent that the governments and the international organizations assume their responsibility in order to find a solution to this grave question.

Medical Teaching Center of Luxemburg.—The necessity of establishing a medical service for the schools was ascertained after the last war. According to official reports 20 to 30 per cent of the students in primary schools were retarded. These retarded children are of four categories: (1) children who, through idleness, lack of guidance on the part of parents and teachers and unfavorable social environment, do not fit into the normal social scheme and, therefore, become members of gangs, (2) retarded children—the maladjusted, the children who rebel against scholastic discipline, (3) children who are morally abandoned and who are truant from school and (4) retarded children who require psychiatric care. The government, in order to give special care to these abnormal children, commissioned a psychiatrist to organize a pedagogic medical center which, at first, would function in the sphere of social welfare. The center would eventually extend its activity to include all children who need aid of this nature, including those who are under the jurisdiction of the courts.

Tuberculosis in Luxemburg.—The work of René Koltz, based on the last statistics recorded in Luxemburg, shows that the incidence of pulmonary tuberculosis is high among adults, especially among males. This fact should be taken into consideration by all who continue to believe that the campaign against tuberculosis is above all concerned with prevention and eradication of the disease among children. In the urban centers, at present, mass roentgenologic examinations are almost

exclusively reserved for school children, especially for the youngest, who are vaccinated with BCG. The comparative study of mortality and morbidity rates due to pulmonary tuberculosis shows that the campaign against the disease should be particularly active in the rural areas. The very low morbidity-mortality index in the rural areas is the result of the failure to report and detect the disease and thus causing unfavorable after-effects for the sick and their environment.

BRAZIL

Experimental Sex Studies on Schistosoma Mansoni.—Dr. Wladimir L. Paraense of the Oswaldo Cruz Institute is undertaking experimental investigations on intestinal schistosomiasis, in a field laboratory at Belo Horizonte, state of Minas Geraes. A partial report was recently published on sex studies of the parasite in infestations produced by cercariae from a single snail. During the studies, 53 planorbidae were utilized to inoculate 53 vertebrates (2 rabbits, 3 guinea pigs, 12 rats and 36 mice). With the exception of 10 mice, in which cercariae were inoculated into the peritoneum, all the others were contaminated by immersion during 30 minutes in water containing cercariae. A few of the inoculated animals died in consequence of the infestation, as could be judged by the great number of parasites found in their livers. All others were killed so that trematodes could be searched for, which was done by removal of the liver after ligation and section of the blood vessels. Trematodes and their eggs were recovered and counted, and the characteristic pigment was also adequately identified.

Important questions were settled by Dr. Paraense's experiments. The first question to be studied was the numerical ratio between the two sexes of S. mansoni. Of the 53 inoculated vertebrates, seven presented no parasites and nine showed parasites with insufficient development to permit distinction of the sex. The remaining 37 were divided as follows: 17 presented only male trematodes, 14 had only female trematodes and six had trematodes of both sexes. Starting from the hypothesis of the pedogenic parthenogenesis admitted by Tanabe and Yokogawa, and by Cort, for S. japonicum, and of the fact that the sexes are chromosomally predetermined for both S. japonicum and S. mansoni, the author believed it possible to affirm that the normal sexual ratio is 1:1. For the 31 vertebrates that were infested only by male or only by female trematodes, the calculated probability was extremely high that the ratio 17:14 differs from 1:1 by chance alone. The second question considered in Dr. Paraense's experiments was that of the unsexuality or bisexuality in the infestations produced by cercariae from a single snail. In the study of this problem the author began by putting aside the seven mice which died from the eighth to the eighteenth day after the infestation, as it was impossible to distinguish the sexes in parasites so young. It was also impossible to distinguish the sexes in irregularly developed parasites from a mouse and from a rat that died on the forty-ninth and the ninety-fifth days, respectively, after the infestation. As the irregularity of the somatic development of schistosomes in unisexual infestations is a known fact, the author thought it a fair assumption that these two cases were of unisexual infestation, although it was not possible to identify the sex of the parasites. Up to now it has not been possible to observe with certainty the production of eggs by female schistosomidae and their position in the host's tissues in the absence of males. Thus, the cases of three rats and four mice that showed neither parasites nor eggs, but had the characteristic pigment in the tissues examined, were considered by Dr. Paraense as instances of extinct unisexual infestation. Therefore, he could count a total of 46 cases of infestation, which was unisexual in 40 cases (86.9 per cent) and bisexual in six (13.1 per cent). The high percentage of bisexual infestations is a consequence of the great infestation index of the mollusks (21 per cent).

Despite the small number of observations, other interesting information was gathered from an experiment of successive inoculations with cercariae from a single mollusk. Some of the snails used for the inoculations stayed alive in the laboratory sufficiently long to permit a second series of inoculations in rats after seven days (five cases) and even a third series (two cases). If one excepts the case of snail no. 2, the second series of inoculations reproduced exactly the qualitative results of the first series. The cercariae from snail no. 2 produced a bisexual infestation in the first series of inoculations, three males and five females having been counted, besides two couples seen in copula. All the females had an egg in the uterus, and several eggs were found in the tissues of the host's liver. But the second inoculation of cercariae from the same snail produced exclusively females, five having been found without an egg in the uterus, besides the absence of eggs in the host's liver. After a new interval of seven days, there were only two snails alive (no. 3 and 4), the cercariae of which were used for a third series of inoculations. The cercariae from snail no. 4 produced, as in the previous series, a bisexual infestation, 29 males and 4 females having been found, the latter coupled, and each one had an egg in the uterus. The cercariae from snail no. 3, which had previously produced only males, caused then a bisexual infestation. Twelve males and six females were recognized, all the latter coupled and had an egg in the uterus. Dr. Paraense observed, he believes, the maturation and the beginning of the emission of cercariae of a female clone.

Besides having permitted the dissociation of bisexual infestations, these experiments suggest ideas about this type of infestations. Several authors admit that the development of a miracidium in a mollusk inhibits the development of another miracidium of the same species. Perhaps this inhibition occurs when, between two penetrations, there is a sufficiently long period of time to allow the development of immunity. The author thinks it probable that in the cases of snails no. 2 and 3 the penetrations have been approximately simultaneous and an asynchronism in the evolution of the two clones may have occurred. This asynchronism exists among the descendants of a single miracidium; for this reason, a contaminating snail may emit cercariae during many successive days. It would not be strange that a similar condition might arise in the case of two lineages evolving contemporaneously. The results of Dr. Paraense's experiments confirm the idea that the females of S. mansoni do not reach complete sexual maturity when evolving in the absence of males. In no case of unisexual infestation could an egg be observed in the uterus, nor did the systematic examination of the livers of hosts exclusively contaminated by females reveal them.

Jaundice in a General Hospital.—In a total of 7,123 patients of the Rio de Janeiro Hospital dos Servidores, Dr. Aloysio S. Fonseca reported 40 cases of jaundice (0.06 per cent) as the principal symptom of several diseases. In Dr. Fonseca's report, the cases of icterus are classified under the three main headings after Hector Ducci: prehepatic (hemolytic and nonhemolytic), hepatic (hepatocellular and hepatocanalicular) and posthepatic (obstructive). Only two cases of the first type were described, one with the diagnosis of sickle cell anemia and the other with that of familial hemolytic jaundice. Twenty-two cases of hepatic jaundice were included in Dr. Fonseca's report (17 males and five females), 11 patients being in the age group 20-39 years, nine in the group 40-59 years and two in the group 60 years and over. The final diagnosis of the hepatic jaundices was acute hepatitis of undetermined cause (6), hepatic cirrhosis (4), acute hepatitis caused by homologous serum (2), viral acute hepatitis (2), acute catarrhal jaundice of undetermined cause (2), secondary cancer of liver (2) and lymphosarcoma, toxic acute hepatitis, colibacillary acute hepatitis and salmonellar acute hepatitis (1 each). The commonest symptoms present in these cases were choleuria (22 cases), asthenia (18), fever (15), hepatomegaly (14), nausea (13), acholic stools (12) and discolored stools (10). In 2 cases the final diagnosis was established by means of hepatic biopsy and in five by autopsy. An interesting observation was the complete absence of the mention of outbreaks of jaundice, as is a fact currently reported in the Brazilian medical literature. Sixteen cases of posthepatic jaundice were reported (9 males and 7 females), 4 patients being in the age group 30-39 years, 8 in the group

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40-49 years and 4 in the group 50-59 years. The final diagnosis of posthepatic jaundice was gallbladder calculi (9 cases), choledochostenosis (5), chronic cholecystitis (3), biliary cirrhosis (3), cholangiitis (3), calculous choledochostenosis (3), cancer of the head of the pancreas (2), chronic interstitial pancreatitis (2) and cancer of the gallbladder, diffuse endothelioma of the biliary ducts, postoperative biliary fistula, subacute pericholecystitis, odditis and biliary dyskinesia (1 each).

Roentgen Examination of the Breast.—Roentgen examination of the breast after injection of an opaque medium helps the detection of cases which go unnoticed in the plain roentgenogram, according to Drs. J. M. Cabello Campos, José Gallucci and João Sampaio Goes in a paper read before the Brazilian chapter of the Inter-American College of Radiology. They claim that it aids in the diagnosis of intracanalicular tumors as well as those lying near the canaliculi. It is mainly indicated in cases of "bleeding breast." It serves to distinguish malignant from benign tumors, and is harmless, for the opaque substance is not an irritant and is readily eliminated.

MEXICO

New Hospitals.—From 1940, the year in which modern hospital planning was undertaken in Mexico, to 1950, the following progress has been made.

In Mexico City three types of hospitals have been built: (1) "Centro Medico," (2) "Seguro Social" and (3) government department hospitals. Of the hospitals that form the "Centro Medico" (Medical Center), the first to be built was the Hospital Infantil (Children's Hospital), which was dedicated in 1942. The second was the Instituto de Cardiología (1943), which is well known in other countries and is considered an excellent research institution. In 1946 the Hospital de Enfermedades de la Nutrición began its activities. It is smaller than the other hospitals; nevertheless the influence it has exercised in Mexican medicine during the last years is acknowledged by everybody.

To be dedicated in the course of 1951 is the Maternidad Mundet, with a capacity of 600 beds. This has been partially endowed by private contributions.

In December 1950, President Alemán sent to the Mexican congress a bill providing for immediate creation of four more hospital units, institutes of gastroenterology, cancerology, urology and ophthalmology. A "patronato" (board of trustees) will be responsible for their financial management.

The "Seguro Social" is a government agency that provides for the general welfare of workers, including medical care and insurance. It is financed by compulsory contributions from industry, from the workers in lesser proportion and from the government itself. The Seguro Social has built two large hospitals in Mexico City, one in the northern and the other in the southern part of the city.

The Hospital Militar and the Hospital de los Ferrocarriles (Railroad Hospital), which are hospitals of the government departments or dependencies, were opened several years ago. The Hospital de la Secretaría de Comunicaciones (Communications Department Hospital) was recently added to this group. Completion of the Education Department Hospital is scheduled for 1952.

In other large cities the hospitals have been designed according to the general scheme of those of Mexico City. The San Luis Potosí Hospital and the Civil Hospital of Monterrey, have been completed, and the General Hospital of Veracruz will soon be opened. More than 15 rural hospitals have been completed. They differ widely in capacity and activity, depending on geographic location and density of population.

Hospitals for the treatment of tuberculosis, the incidence of which is still high in Mexico, were located in widely separated areas to avoid concentration of patients in Mexico City. A hospital was built for the Gulf Coast, near Veracruz, and another for the Pacific area, in Guadalajara. These units were finished last year; each has a 300 bed capacity. In Mexico City, a new building was added to the Huipulco Sanitarium and a new hospital, also with 300 beds (Hospital Manuel Gea González), was dedicated in 1947.

CORRESPONDENCE

LUNG CANCER AND TOBACCO SMOKING

To the Editor:—Several recent publications in this country and abroad have indicated serious and growing interest in tobacco smoking as "a likely and possibly major factor" in the rising lung cancer incidence. It is thus unfortunate that the letter by Deibert (Cancer of the Lung, *J. A. M. A.* **144**:64 [Sept. 2] 1950), with the prestige of the National Cancer Institute behind him, may be used to belittle the work of these investigators. As one of the investigators in this field, I would like to point out that in no case has the claim been made (or even hinted) that tobacco smoking is, or even may be, "the" cause of lung cancer. In every paper published it was referred to as "a," "a possible," "a contributing" or "a likely" factor in the lung cancer increase. However, no one is ready at this time to prove conclusively that there is "a specific cause" for lung cancer. Nor should there be condemnation of the long and widely held idea of chronic irritation as an important factor. It is inadvisable to place emphasis on the failure of tobacco smoke to produce lung cancer in mice within the few months of their life span, when decades of exposure are needed in man. One careful British investigator has even gone so far as to claim a simple proportion between likelihood of development of lung cancer and the number of cigarets smoked by men over 45 years of age (who would have been smoking already for more than two decades), that such smokers using 25 or more cigarets a day are 50 times more likely than nonsmokers of similar age to develop lung cancer.

An unfortunate outgrowth of Deibert's criticism has been its exploitation in the lay press to allay all fears of ill effects from tobacco smoking (*Collier's*, "Don't Smoke—Unless You Like It," Nov. 4, 1950). One valid criticism of tobacco smoking studies that Collier's article does offer concerns the use of hospitalized patients as smoking controls instead of a cross section of a normal, well population. We recognized the validity of this criticism four years ago, when we started our studies with a smoking survey of persons of all ages and colors and both sexes in every census tract of Columbus, Ohio.

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COTTONSEED AS AN ALLERGEN

To the Editor:—The authors of the article "Importance of Foods in Patients as Determined by Skin Testing and Intentional Feeding" (*J. A. M. A.* **144**:990 [Nov. 19] 1950) are to be complemented on their efforts. However, some comment is necessary. In the foods studied they omitted one which my co-workers and I find very important, cottonseed. Although this substance also acts as an allergen by inhalation and contact, its wide use by ingestion, as an oil for potato chips, doughnuts and many other foods, requires inclusion in any allergy study. Some of the most explosive types of respiratory allergy, such as asthma, follow ingestion of this food, and we often refer to this form of asthma as "potato chip asthma."

The authors used the intracutaneous method of testing but failed to state whether a control test was done with each series of tests, as this method elicits many false positive reactions, especially in sensitive skins, and, unless results compared with those in controls at each series, wrong conclusions are frequently arrived at. Itching at the test site is also significant.

Had cottonseed been included in their study, a much higher percentage of positive skin reactions would be reflected in clinical substantiation and indicate even more emphatically the value of allergy skin tests for reactions to foods.

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MEDICAL MOTION PICTURES

Curare in Barbiturate-Nitrous Oxide Anesthesia: 16 mm., color, silent, showing time 26 minutes. Prepared by Fernando Hudon, M.D., professor of anesthesia, and Andre Jacques, M.D., assistant professor of anesthesia, Hotel Dieu Hospital and Laval University, Quebec, Canada. Produced in 1950 by and procurable on loan from E. R. Squibb and Sons, 745 Fifth Avenue, New York 22.

This film presents in detail the intravenous administration of curare and thiopental sodium and the inhalation of nitrous oxide and oxygen combined with the use of the blind endotracheal intubation technic as employed at the Hotel Dieu Hospital, Quebec. The method was used particularly for tonsillectomy in adults and children, laryngoscopy and bronchoscopy, but reference is made to its use in other surgical fields. Disadvantages as well as advantages of the technic are discussed. The preanesthetic preparation of equipment is well presented.

This technic, with its many inherent hazards, should be restricted to expert anesthesiologists. Unless the photography is at fault, some of the scenes reveal marked disturbances of respiration and oxygenation during induction. In the laryngoscopy demonstration, "manual compression" of the chest is recommended and demonstrated as a method of assisting respiration. That this method is adequate or advisable is questionable. However, the authors include a good discussion of the need for the administration of oxygen at some periods of the procedure.

More editing would improve the film, as some footage is out of sequence and there are two misspelled words. The picture contains a great many long titles, and some audiences may prefer to run the film at sound speed. In its present form, the film is recommended for showing to experienced anesthesiologists only, since they might be interested in observing the author's technic and could evaluate the limitations and hazards of this procedure. With an explanatory discussion of the latter factors, it would be of interest to anesthesiology residents. The photography is good except that a few scenes are out of focus.

Surgical Approaches to the Elbow Joint: 16 mm., color, sound, showing time 37 minutes. Prepared by Dr. LeRoy Abbott, University of California. Produced in 1950 by Churchill-Wexler Film Productions, Los Angeles. Procurable on loan from Presentation Division, Veterans Administration, Vermont Avenue and H Street, N.W., Washington 25, D. C.

This motion picture combines, as did the earlier film on the surgical approaches to the scapulohumeral joint, the anatomic and surgical approaches to the indicated articulation. Skilful blending of animated drawings with an anatomic review based on demonstration of the parts in the living subject precede the surgical approach. A desirable educational feature of the film is the reiteration and summarization of the essentials of a given section after it is first pictured and described. For exact orientation and accurate analysis of the region of the elbow joint, this would appear to be the ideal presentation.

The film should be of great value to one who is gaining his first introduction surgically to this joint and to the surgeon who will welcome its anatomic summarization as well as the clarity with which the surgery is depicted. It is recommended, also, to the medical student taking his first course in human anatomy, for here he will see the dynamics of anatomy. It will present to him vividly and clearly the application of anatomy which at that stage in his medical education is frequently nebulous. The photography, animation and narration are excellent.

Gastric Resection with Antecolic Anastomosis for Duodenal Ulcer: 16 mm., color, silent, showing time 16 minutes. Prepared by Douglas Donath, M.D., Pasadena, Calif. Produced in 1950 by and procurable on rental or purchase from Billy Burke Productions, 7416 Beverly Boulevard, Hollywood 36.

This film illustrates a gastric resection with an antecolic anastomosis for a duodenal ulcer. No roentgenograms or history of the patient are given. The stomach is approached through a right rectus incision. An attempt is made to demonstrate the ulcer, but it is not too plainly shown. The anatomy involved in freeing the greater and lesser curvature of the stomach is well demonstrated. The first portion of the duodenum is divided between Payre clamps and the distal end is infolded with a Parker-Kerr technic used. An end-to-side Polya type of anastomosis is made between the transected end of the stomach and the jejunum, 8 inches beyond Treitz's ligament. This is performed antecolic with the jejunum brought anterior to the transverse colon. The distal three fourths of the stomach is removed. When the gastrojejunostomy is completed, the patient is entirely redraped, the operating team changes gloves and new instruments are used for the closure. The peritoneum and fascia are closed with no. 24 cotton and the skin with clips. The technic shown is excellent, and the anatomy encountered is well demonstrated. The film is fairly well captioned, and the photography is excellent.

This film could be recommended for use in the teaching of medical students and house staff. It could also be used to accompany a lecture on surgery of the stomach as well as a demonstration to other surgeons.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACT

Sales Tax: Liability of Lay Laboratories Making Roentgenogram.—The plaintiff sued to recover sales taxes which he had paid under protest. From a judgment of the trial court directing repayment of such tax money to the plaintiff, the defendant State Board of Equalization appealed to the district court of appeal, second district, division 1, California.

Rule 44, Sales Tax Rules and Regulations of the State Board of Equalization provided:

"Hospitals, physicians, surgeons, dentists, and x-ray laboratories which furnish a diagnosis along with x-ray pictures making a single charge for both, are regarded as consumers of x-ray film used by them, and the tax applies to the gross receipts from the sales of x-ray film to them. 'Lay laboratories,' which do not furnish diagnoses are regarded as selling x-ray pictures and the tax applies to the charges for such pictures."

The plaintiff made x-ray pictures of patients, for the use of doctors and dentists and made reports analyzing their meaning. He was a lay technician. He made, he claimed, no diagnosis although he did advise the professional men of his conclusions of conditions as they appeared to him in the pictures. He "interpreted light shadows." He testified that he did not base his charges at the rate of so much a roentgenogram; that his charges were for his services and securing information necessary for the doctor or dentist in each case. The patients paid for plaintiff's services. The roentgenograms, in each case, were returned to and stored by plaintiff. He testified that it was generally understood that he owned the films at all times. In competition with the plaintiff were x-ray laboratories operated by hospitals and doctors. In his memorandum opinion, the trial judge said ". . . the operation of lay laboratories such as that maintained by plaintiff is practically identical with that of medical laboratories; their charges are about the same; each type of laboratory retains possession of the radiograph, and it is common knowledge that these films are the property of the laboratory producing them. . . ."

The State Board of Equalization, on appeal, contended that the record demonstrates that the plaintiff developed x-ray pictures to the order of his customers for a consideration, and that, therefore, the transactions were sales within the meaning of the law.

The plaintiff contended, first, that there was no sale of the roentgenograms themselves, that the title thereto remained at all times in him and that there was no transfer of title to tangible personal property which would bring the transactions within the statute. In Michigan, said the district court of

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appeal, it has been held that title to exposed x-ray film is not in the patient, but in the doctor who took and developed it. No case has been found respecting property rights in roentgenograms made by lay technicians. In any event, the court continued, the testimony does not support a finding in this case that the roentgenograms at all times belonged to plaintiff. Looking from the form to the substance of the transactions here involved, the court concluded, it is apparent that plaintiff was selling roentgenograms. His contention that the charges were made solely for services cannot be upheld.

The plaintiff also contended that the tax as to him was discriminatory. He pointed out that x-ray laboratories and hospitals "which furnish a diagnosis along with x-ray pictures, making a single charge for both" are exempt from taxation. This contention, said the district court of appeal, is more persuasive. The word "diagnosis" has an established legal meaning. It is the recognition of a disease from its symptoms; it is a part of the practice of the healing art. Diagnoses may only be made by proficient persons, authorized by the state. Neither hospitals nor x-ray laboratories may make diagnoses. Therefore, said the court, it is clear that to exempt hospitals and x-ray laboratories, and at the same time to tax lay laboratories, is discriminatory. Accordingly the district court of appeal affirmed the order of the trial court in favor of the lay laboratory.—*Maranville v. State Board of Equalization, 222 P. (2d) 898 (California 1950).*

Medical Practice Acts: Emergency Medical Assistance.—The defendant, not a licensed physician, was found guilty of having used the title "doctor" in connection with his name, tending thereby to imply and designate himself as a practitioner of medicine and of having undertaken to diagnose and treat the physical condition of a patient. The medical practice act of Florida provides, among other things, that a person "in case of emergency may furnish medical assistance" without practicing medicine or violating the law. Dr. Withers testified that he was a licensed physician, that he owned and operated the Springfield Hospital and that he had practiced in the City of Jacksonville for 20 years or more. He hired the defendant Baxter in 1949 and paid him $125 a month plus room and board, to perform the duties of a practical nurse and orderly for his office and about the hospital. Among other things, Dr. Withers directed the defendant that if he should be absent from the hospital at any time and a doctor should be needed, the defendant was to call a Dr. Thomas.

Mrs. McCaslin testified that she met the defendant through a mutual friend in April of 1949 and engaged him to treat her during pregnancy and to deliver her baby. She also arranged with Dr. Withers to treat her during pregnancy and deliver her child at an agreed sum of $75, which included hospitalization. Baxter did not treat Mrs. McCaslin or make an examination of her at any time prior to June 12. About 5 o'clock in the morning on that date, Mr. McCaslin called the defendant at the hospital and requested that he come out and assist his wife in confinement, but the defendant declined to go. About 8 o'clock, Mr. McCaslin drove to the hospital and got the defendant and took him to his home. The defendant and members of the McCaslin family took Mrs. McCaslin to Dr. Wither's hospital, and she gave birth to a child some one or two hours after her arrival. Dr. Withers testified that he expected to return from a trip on Saturday night, June 11, and that he so informed the defendant. The defendant, therefore, expected to find Dr. Withers at the hospital when he arrived there with Mrs. McCaslin, and he then learned for the first time that Dr. Withers had been delayed. The defendant then called Dr. Thomas but could not get him. As Mrs. McCaslin was then in labor, the defendant, to the best of his ability, assisted her in her confinement. It is true, said the court, that the defendant exceeded his duty as an assistant to Dr. Withers, as a nurse or as an orderly, but, in the absence of Dr. Withers and defendant's failure to get Dr. Thomas, it was an emergency and an exception recognized in the medical practice act.

The record reflects that the defendant joined the Army during the year 1943 and was discharged during 1945. During this service he rendered duties from that of surgery to first aid and was classed as surgical technician and attached to the 24th Division, Medical Corps. The prefix "doctor," said the Supreme Court, is commonly applied by the public to druggists, nurses, dealers in drugs and others. We fail to find evidence showing that the defendant held himself out (to the general public) as being able to diagnose, treat, operate or prescribe for any human disease so as to bring his action within the inhibitions of the medical practice act but, on the other hand, as an exception thereto, to wit "medical assistance in case of emergency." Accordingly the judgment of conviction was reversed and a new trial awarded.—*Baxter v. State, 47 S (2d) 764 (Florida 1950).*

Malpractice: Need for Expert Testimony.—The plaintiff, administrator of his wife's estate, sued for damages alleged to have resulted from the malpractice of the defendant physician. From a judgment in favor of the defendant, the plaintiff appealed to the Supreme Court of Pennsylvania.

The plaintiff's wife consulted the defendant physician, who decided that her right tube and ovary should be removed because of an ovarian cyst. This operation involved severing the ovarian artery and vein which are contained in the infundibulopelvic ligament and ligating them permanently. Because of conditions found when he opened the abdomen, the defendant used one fixation suture ligature instead of the customary two, but, upon completion of the operation the single ligature was apparently doing its job. The operation was concluded at 2:40 p. m., and about two hours later the plaintiff noticed a blood spot on the bed spread about the size of a grapefruit. The patient was hemorrhaging internally. The defendant was immediately notified, and he arranged for another operation, in the meantime having blood plasma and the proper fluids administered intravenously. As soon as possible the defendant reopened the deceased's abdomen and found that the bleeding was coming from the ovarian artery and vein in the infundibulopelvic ligament and that there was no evidence of the single ligature, which had slipped or become detached. In the emergency, he placed two ligatures over the dissected vessel and, after some precautionary steps, the abdomen was again closed. By 8:45 that night, the patient had responded satisfactorily to the emergency measures and the internal hemorrhages had apparently been stopped. A few hours later pulmonary manifestations developed. The defendant was called, but, despite his efforts, the patient died within half an hour. The cause of the pulmonary manifestations was never established.

The plaintiff, said the Supreme Court, had the burden of proving the defendant's negligence and in a case such as this it could be proved only by expert testimony to establish negligence in the operation or a procedure which was not in accord with standard medical practice or negligence in his treatment of the patient after the operation. The only evidence of alleged negligence produced by the plaintiff in this tragic death was the testimony (1) of the defendant, who was called by plaintiff as under cross examination and (2) the decedent's mother, father, brother and husband. The defendant's testimony disclosed no negligence; being credible and not rebutted, said the Supreme Court, this was binding on plaintiff.

The plaintiff also alleged that the defendant did not take proper precautions as to the postoperative care of the deceased, that if proper care had been used it would have disclosed to the defendant the fact that undue hemorrhage was taking place. The plaintiff sought to imply that the intern and the nurse paid no attention to his wife from the time she returned from the operating room until he called their attention to the large amount of blood in the patient's bed one hour and a half later. There was no evidence that the hospital, intern or nurse were negligent in their postoperative care of the patient, said the Supreme Court, but, even if they had been, the defendant under the facts in this case would not have been liable therefor. Accordingly the judgment in favor of the defendant physician was affirmed.—*Scacchi v. Montgomery, 75 A (2d) 535 (Pennsylvania 1950).*

MEDICAL LITERATURE ABSTRACTS

A.M.A. Am. Journal of Diseases of Children, Chicago

80:889-1058 (Dec.) 1950

Liver Steatosis in Undernourished Chilean Children: I. Its Evolution as Followed by Serial Puncture Biopsies. J. Meneghello, H. Niemeyer and J. Espinosa.—p. 889.
Id.: II. Study on Some Liver Function Tests. H. Niemeyer and J. Meneghello.—p. 898.
*Id.: III. Evaluation of Choline Treatment with Repeated Liver Biopsies. J. Meneghello and H. Niemeyer.—p. 905.
Dysentery Due to Sulfonamide-Resistant Shigella Sonnei Controlled with Chloromycetin.® M. L. Cooper and H. M. Keller.—p. 911.
Effect of National Health Service of Great Britain on Child Care in England, Scotland and Wales. H. N. Sanford.—p. 921.
Enrichment of Milk Vitamin A in Normal Lactating Women: Comparison Following Administration of Vitamin A in Aqueous and Oily Mediums. A. E. Sobel, A. Rosenberg and B. Kramer.—p. 932.
Plasma Prothrombin in Infantile Diarrhea. Y. Matoth.—p. 944.
*Duration of Acute Leukemia in Children: Review of Literature and Report of Case of Unusually Long Survival. E. A. Moody and R. W. Davis.—p. 955.

Choline Treatment in Children with Liver Steatosis.—A multiple deficiency syndrome observed among urban children in Chile is characterized by liver steatosis. Meneghello and Niemeyer studied the effect of choline on the liver in that syndrome by periodic needle biopsies in two groups of infants, both receiving a high protein, low fat diet. Of these infants, 23 received a daily dose of 5 Gm. of choline hydrochloride for at least 10 days. Eighteen received no choline. In most of the first group the removal of fat from the liver was accelerated, as they had less fatty infiltration after a given length of time. This is direct proof of the lipotropic action of choline on the human liver, at least in patients with this form of liver disease. Histological study of the diseased liver revealed that the effect of choline therapy is shown more in the rapidity of improvement than in the degree of ultimate improvement achieved. The authors feel that the data they obtained indicate a general and statistically valid result of choline therapy rather than universal success. Occasional failures are to be expected.

Duration of Acute Leukemia in Children.—Moody and Davis report on a girl who was hospitalized at the age of 19 months. The chief complaint was pallor of seven weeks' duration, associated with slight fatigue and anorexia. Two days prior to her admission she had a mild nasal discharge and appeared pale and listless. The red blood cell count was 1,110,000. A sternal biopsy specimen showed a decided preponderance of small lymphocytes and suggested lymphatic leukemia. Hypoplastic anemia was also considered. The red blood cell picture improved following blood transfusion and administration of liver extract and folic acid. Other classic signs of acute leukemia, such as thrombopenia, bleeding tendency, enlargement of the spleen and liver and changes in the peripheral blood, eventually appeared and made the diagnosis obvious. The appearance of these classic signs caused the authors to consider her disease as one of the group of acute leukemias rather than as an example of the more chronic type usually observed in adults. The patient lived 20 months after the onset of the disease and 18 months after the diagnosis had been suggested by results of sternal biopsy. The vigorous supportive treatment, including transfusion, high voltage roentgen therapy and administration of aminopterin (4-aminopteroylglutamic acid) was partially responsible for the prolonged survival. A review of the literature indicates that case reports of leukemia in children with prolonged survival periods are not entirely satisfactory. The authors' case is not the longest survival of a child with leukemia. It is, however, one of the few cases of authenticated survival beyond 18 months of a child with lymphatic leukemia.

The Association library lends periodicals to members of the Association and to individual subscribers in Continental United States and Canada for a period of five days. Three journals may be borrowed at a time. Periodicals are available from 1940 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted.

A.M.A. Archives of Otolaryngology, Chicago

52:843-1012 (Dec.) 1950. **Partial Index**

SYMPOSIUM ON HISTOLOGY AND PATHOGENESIS OF OTOSCLEROSIS:
Fistular Region of Otic Capsule in Relation to Otosclerosis. B. J. Anson.—p. 843.
Incidence, Location and Extent of Otosclerotic Lesions. S. R. Guild.—p. 848.
Otosclerosis: Hypothesis of Its Origin and Progress. D. Wolff.—p. 853.
Influence of Systemic and Local Factors on Development of Otosclerosis. J. R. Lindsay.—p. 868.
Postnatal Rebuilding and Otosclerotic Bone Formation in Region of Otic Capsule. T. H. Bast.—p. 882.
*Critical Evaluation of Antihistaminic Drugs in Common Cold. N. D. Fabricant.—p. 888.
Classification of Chronic Diseases of Nose and Accessory Sinuses. N. Fox and L. M. Niles.—p. 900.
*Streptomycin Therapy in Oral Tuberculosis. H. Oppenheim, C. S. Livingston, J. W. Nixon and C. D. Miller.—p. 910.
Tympanomeatal Membrane in Fenestration Operation: Its Relation to Bony Closure of Fenestra. S. Rosen.—p. 930.
Use of Vinegar as Antibiotic in Treatment of Chronic Middle Ear Disease.—I. L. Ochs.—p. 935.
Rhabdomyosarcoma of Maxillary Antrum: Seven Year Survival Following Surgical Excision and Radiation Therapy. P. N. Pastore, P. F. Sahyoun and F. B. Mandeville.—p. 942.
Plastic Surgery. L. A. Peer, J. C. Walker and J. Van Duyn.—p. 964.

Antihistaminic Drugs in the Common Cold.—To evaluate antihistaminic drugs in the treatment of the common cold, Fabricant reviews a number of reports and describes observations on students of two Chicago colleges who participated in an investigation during a four month period. The notion that allergy is mainly responsible for the common cold has never been substantiated by reliable investigators. Although antihistaminic drugs are not viricidal, bactericidal or bacteriostatic, antihistamine therapy of the common cold has been propagandized as being highly effective in the prevention and treatment of the common cold. Antihistaminic drugs possess sedative properties when used in small doses, and in large doses they are cerebral excitants. Users of these agents have been known to fall asleep while at work, while operating machinery or while driving automobiles. Children have died after the accidental ingestion of large doses of antihistaminic drugs. Most of those who approved the use of antihistaminic drugs for the common cold failed to distinguish the infectious cold from frequent vasomotor disturbances and from nonspecific or allergic factors; many did not use proper control series and placebo therapy, and the diagnosis was not established beyond reasonable doubt. On the other hand, the failure of the antihistaminic drugs in the treatment of the common cold has been demonstrated in a number of carefully controlled studies in the United States and Great Britain. These demonstrate that antihistaminic drugs do not prevent, abort, curtail, reduce or cure the common cold.

Streptomycin Therapy in Oral Tuberculosis.—In a review of previous reports on oral tuberculosis, Oppenheim and his associates give particular attention to its frequency, the types and localization of its lesions and the prognosis. Then they describe their own observations on 11 oral lesions of proved tuberculous origin that occurred among 1,796 patients (0.61 per cent). Of these, five occurred on the buccal mucosa, three on the tongue, two on the alveolar process and one on the lower lip. Superficial and deep ulcers, as well as granulomas, predominated. Two fistulas were observed. One penetrated from the alveolus into the gingiva and the other from the buccal mucosa through the skin of the cheek. One nonlingual lesion assumed the form of a fissure. These lesions all occurred in male patients with far advanced pulmonary tuberculosis who had acid fast bacilli in their sputum. The tuberculous origin of every lesion was verified by biopsy, except for the buccal fistula, in which tubercle bacilli were isolated from the drainage. The diagnosis was usually made during routine otolaryngological or dental examination. The patients complained of pain only when ulcer-

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ations were present. None complained of swelling or pain in the regional lymph nodes. Ten of 11 patients were treated with streptomycin or dihydrostreptomycin and paraaminosalicylic acid, and the lesions healed in 10 days to two months. Two recurrent lesions remained healed after a second course of streptomycin therapy. Although this series is small and the observation period is relatively short, the authors feel that treatment with streptomycin or dihydrostreptomycin is a simple and effective method of combating oral tuberculosis.

American J. Digestive Diseases, Fort Wayne, Ind.

17:355-386 (Nov.) 1950

Influence of Vagotropic and Sympathicotropic Stimuli on Secretion of Gastric Mucin and Its Fractions in Man. G. B. Jerzy Glass and L. J. Boyd.—p. 355.
Resin-Gastric Mucin Mixture in Medical Management of Peptic Ulcer. F. Steigmann and R. B. Schlesinger.—p. 361.
Effect of Shock upon Mortality Rate of Perforated Peptic Ulcer. R. P. Reynolds, M. O. Cantor and C. Stebbins.—p. 365.
Effects of Variable Intervals of Cooling upon Responses of Lapin Intestine and Uterus and Feline Intestine to Histamine, Acetylcholine, Pituitrin and Barium Chloride. B. N. Craver and W. E. Barrett.—p. 367.
*Activity of Cashew (Anacardium Occidentale) Nutshell Oil in Human Ancylostomiasis. F. W. Eichbaum, D. Koch-Weser and A. T. Leao.—p. 370.
Differential Diagnosis of Obstructive Jaundice. G. A. Wagner.—p. 371.
Diverticula of Stomach. G. Rosenburg.—p. 373.
Post-Operative Analysis of Gastric Chemistry in Cases Following Gastroenterostomy and Partial Gastrectomy for Duodenal Ulcer. Inferences on Faulty Surgery in Relation to Post-Operative Symptomatology. M. Golob.—p. 377.

Cashew Nutshell Oil in Ancylostomiasis.—Eichbaum and his co-workers observed the vermicidal activity of cashew (Anacardium occidentale) nutshell oil in dogs with ancylostomiasis and then used this oil in patients, because the commonly used vermicides are either toxic (chenopodium oil, carbon tetrachloride and thymol) or of limited efficacy (hexylresorcinol and tetrachloroethylene). Patients who constantly eliminated a high number of eggs were treated. Feces were examined at least three times before treatment for determination of the constancy of the egg elimination. A saline purgative was administered before stool collection. The results of the treatment were checked by stool examinations seven and 14 days and, if possible, one to two months after the administration of the drug in gelatine capsules (1 Gm. of cashew nutshell oil per capsule). The dose for adults varied between 4 and 6 Gm., for children between 3 and 4 Gm. The drug was given in the morning when the patient's stomach was empty, and no food was allowed until noon. If necessary, the treatment was repeated as often as four times at two week intervals. With an average total dose of 13 Gm. divided in three single doses given at intervals of two weeks, a complete cure was achieved in 14 of 22 (64 per cent) patients. In the remaining eight patients the number of eliminated eggs was reduced by 78 to 99 per cent of the initial count. A significant vermicidal effect was obtained also in three cases of Ascaris and three cases of Trichuris infestation. Cashew nutshell oil has a mild purgative effect. No toxic symptoms were observed.

American Journal of Hygiene, Baltimore

52:251-374 (Nov.) 1950

Studies on Schistosome Dermatitis: XI. Status of Knowledge After More Than 20 Years. W. W. Cort.—p. 251.
Effect of Phenylhydrazine Hydrochloride on Plasmodium Knowlesi Infection in Monkey. R. H. Rigdon, D. W. Micks and D. Breslin.—p. 308.
Age Incidence and Seasonal Development of Neutralizing Antibodies to Lansing Poliomyelitis Virus. T. B. Turner, D. H. Hollander, S. Buckley and others.—p. 323.
*Control of Anopheles Pseudopunctipennis in Mexico with DDT Residual Sprays Applied in Buildings: Part III. Malariological Observations After Five Years of Annual Spraying. W. G. Downs, H. Celis S. and J. B. Gahan.—p. 348.
Study of Reactions Following Administration of Crude and Purified Diphtheria Toxoid in Adult Population. A. M. Pappenheimer Jr., G. Edsall, H. S. Lawrence and H. J. Banton.—p. 353.

Anopheles Control with DDT.—Downs and his associates report on the result of annual residual spraying (in March or April) of houses with DDT (dichlorodiphenyltrichloroethane) for five or four successive years in certain districts in Mexico. They observed a reduction in the incidence of malaria ranging from 75 to 90 per cent. The emulsion of DDT made from surface-water-wettable powder was applied at an estimated 200 mg. per square foot. Plasmodium falciparum infections, formerly common, have become rare. Most cases are now caused by P. vivax and a few by P. malariae. Anopheles pseudopunctipennis larvae and adults, although lower in density than before sprayings were begun, are still common in the region. They are rarely seen in the sprayed houses. Few autochthonous cases of malaria, contracted after the spraying program began, were seen in the resident population of the sprayed towns.

American J. of Obstetrics and Gynecology, St. Louis

60:947-1186 (Nov.) 1950

Life of James Marion Sims: Presidential Address. J. L. Baer.—p. 949.
Hyperplasia and Hypertrophy of Uterine Vessels During Various Stages of Pregnancy. O. H. Schwarz and W. D. Hawker.—p. 967.
Bacteriological Studies in Salpingitis with Special Reference to Gonococcal Viability. J. M. Hundley Jr., W. K. Diehl and J. W. Baggott.—p. 977.
Squamous Epithelium and Squamocolumnar Junction of Cervix During Pregnancy. D. N. Danforth.—p. 985.
Fetal Mortality. L. A. Calkins.—p. 1000.
Place of Radioactive Isotopes in Therapy. A. M. Brues.—p. 1009.
*Coagulation Defects with Intrauterine Death from Rh Isosensitization. A. E. Weiner, D. E. Reid, C. C. Roby and L. K. Diamond.—p. 1015.
Management of Pregnant Diabetic Woman and Her Newborn Infant. R. A. Reis, E. J. DeCosta and M. D. Allweiss.—p. 1023.
Inactivation of Antidiuretic Hormone of Posterior Pituitary Gland by Blood from Pregnant Patients. W. J. Dieckmann, G. F. Egenolf, B. Morley and R. E. Pottinger.—p. 1043.
Glomerular Filtration Rates, Renal Plasma Flow, and Sodium and Water Excretion in Pregnancy Toxemia. R. R. de Alvarez.—p. 1051.
Vaginal Plastic Surgery in Treatment of Lacerations and Displacements of Female Genital Tract: Study Based on 1,143 Patients Operated upon from Jan. 1, 1938, to Jan. 1, 1948. L. E. Phaneuf.—p. 1068.
Changing Indications for Hysterectomy in Climacteric Woman. J. R. Willson and M. J. Daly.—p. 1088.
Tubal Sterilization. F. C. Irving.—p. 1101.
*Use of Radioactive Cobalt in Treatment of Carcinoma of Cervix. A. C. Barnes, J. L. Morton and G. W. Callendine Jr.—p. 1112.
Method of Diagnosing and Treating Functional Pelvic Disease. F. R. Lock and H. M. Sluder.—p. 1121.
New Method of Quantitative Estimation of Cephalopelvic Disproportion. H. C. Moloy and C. M. Steer.—p. 1135.
Experimental Endometriosis. R. W. Te Linde and R. B. Scott.—p. 1147.

Coagulation Defects with Intrauterine Death.—Weiner and co-workers report three pregnant multiparous women, aged 36, 31 and 26 respectively, who had anti-Rh agglutinins with intrauterine death of the fetuses presumably on the basis of this isosensitization. The fetuses were retained in utero for various periods after death. The clinical course of the patients was complicated by intrapartum and postpartum hemorrhages. Clotting tests, tests for fibrinolytic activity and possible presence of anticoagulants, platelet counts, prothrombin activity determinations and studies of the blood concentration of fibrinogen demonstrated that afibrinogenemia may develop in a sensitized Rh-negative patient carrying a dead fetus. Unless the situation is recognized and promptly treated, serious hemorrhage may occur at the time of labor and delivery. Diagnosis of secondary afibrinogenemia can be made while the patient is asymptomatic and prior to the onset of labor. The absence of a clot or a pronounced decrease in the size and stability of the clot formed by a few cubic centimeters of freshly drawn venous blood will indicate a critical reduction in blood fibrinogen concentration. Fibrinogen replacement restores coagulability of the blood in the test tube and in the patient. A total of 6,000 mg. of fibrinogen should be administered. Should the hemorrhage be due to afibrinogenemia alone, hemostasis will probably follow fibrinogen replacement and further treatment will be unnecessary. Hysterectomy for the control of postpartum hemorrhage must be avoided in the patient with afibrinogenemia until the coagulation mechanism has been restored.

Radioactive Cobalt in Treatment of Carcinoma of Cervix.—Barnes and co-workers treated 40 women with carcinoma of the cervix with radioactive cobalt (Co^{60}). According to the League of Nations classification, one patient was in clinical class I, 15 in class II, 16 in class III and six in class IV. Two patients had carcinoma in a cervical stump. After activation

in the nuclear reactor, cobalt forms a relatively stable isotope with a soft beta ray that requires minimal shielding and has a homogeneous gamma irradiation. It can be machined to any desired shape prior to activation and constitutes an easily handled radioactive material. Advantage was taken of these qualities in the application of cobalt 60 to the authors' patients. Fine caliber needles were used that had been fashioned to the desired length and strength, and template guides were introduced for precision of needle placement. These factors tend to increase the safety of multiple source intrapelvic irradiation, and an evenly distributed pattern of radiation can be designed to fit the patient's pelvis and the spread of her lesion. As an initial step in the therapy, the patients received external roentgen irradiation (2,000 r to a 20 cm. by 20 cm. anterior port and the same dose to a similar posterior port). Determination of the correct size of the templates and the arrangement of the needles were made at the end of this series of treatments. The insertion of the plates and needles was done under thiopental sodium anesthesia. The entire mass of templates and needles was packed in place and was usually left for six to seven days. The objective is administration of a dosage of about 6,000 to 7,000 tissue roentgens to the tumor with moderate intensity over a long period rather than in a more intense dose over a briefer period. Three patients died within a few weeks of completing the cobalt therapy. Five additional patients have died between five and 11 months after the treatment. Necropsy on four revealed some pelvic cancer that appeared almost untreated on the one hand, and a relative absence of actively growing neoplasm on the other—a range characteristic of patients treated with more traditional forms of irradiation.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

64:723-906 (Nov.) 1950

*Roentgenological Diagnosis: Generalized Subserous Emphysema Through Single Puncture. M. Ruiz Rivas.—p. 723.
Roentgenographic Aid in Diagnosis of Retinoblastoma. H. Fulton. —p. 735.
Roentgenologic Aspects of Diffuse Miliary Granulomatous Pneumonitis of Unknown Etiology: Report of 12 Cases with 18 Months' Follow-Up. B. Felson, G. F. Jones and R. P. Ulrich.—p. 740.
*Pulmonary Calcification—Tuberculosis?, Histoplasmosis? F. N. Silverman.—p. 747.
Gastric Ulcer in Childhood. M. D. Ingram Jr.—p. 765.
End-to-End Anastomosis of Colon Following Resection: Roentgen Study of 42 Cases. M. Sharpe and R. Golden.—p. 769.
Prone Position in Roentgenologic Diagnosis of Free Intra-Abdominal Gas. G. B. Nichols.—p. 778.
Roentgenological Diagnosis of Sponge in Abdomen. M. Slater.—p. 781.
Pyopneumohepatitis: Case Report. A. A. Zingaro.—p. 785.
Melorheostosis Léri: Review of Literature and Report of Case. M. B. Spiegel and G. H. Koiransky.—p. 789.
Radiology in the Medical School. E. P. Pendergrass.—p. 795.
Multiple Myeloma: II. Variability of Roentgen Appearance and Effect of Urethane Therapy on Skeletal Disease. R. W. Rundles and R. J. Reeves.—p. 799.
Roentgen Therapy of Osteomyelitis of Fingers. A. H. Baker and F. Friend.—p. 810.
Complications Following Use of Neo-Iopax in Cerebral Angiography. L. A. French and P. S. Blake.—p. 816.
Experimental Study of Cardiovascular Effects of Diodrast. A. J. Gordon, S. A. Brahms, S. Meginbow and M. L. Sussman.—p. 819.
In Vivo Localization of Radioactive Silver at Predetermined Sites in Tissues: Preliminary Report. H. D. West, R. R. Elliott, A. P. Johnson and C. W. Johnson.—p. 831.

Subserous Emphysema in Roentgen Diagnosis.—Ruiz Rivas describes a new method of using air as a contrast medium in roentgen diagnosis. He demonstrates how structures such as the uterus, fallopian tubes, ovaries, liver and spleen, not previously demonstrable roentgenologically, can now be visualized by injection of oxygen into the subserous connective tissues surrounding them. Since there is an anatomic continuity of the deep connective tissue of the pelvis, abdomen, thorax, neck and extremities, emphysema produced at certain levels can be made to spread all over the body. Thus, only a single injection is required—a distinct advantage over previous methods. The tissue best suited for introduction of gas is that of the pelvic region, particularly the pararectal tissue, because of its accessibility and its ample communication with the retroperitoneal tissue and because of the tendency of gaseous infiltrations to creep upward. The puncture is made at the level of the sacrococcygeal joint 1 or 2 cm. beyond the inferior border of the sacrum. The needle is directed obliquely upward, inward and forward in such a way that the point comes to rest in the presacral connective tissue as near as possible to the anterior surface of the sacrum and in its midline. The resultant pneumoretroperitoneum outlines the various cul-de-sacs of the peritoneum as well as the solid viscera. In contrast to previous methods it also outlines a kidney that has descended outside the limits of the renal fascia. For production of a pneumoparametrium, oxygen can be introduced directly through the vagina or through the pararectal space. With either of these technics it is also possible to obtain thoracic and cervical emphysema, but this is minimal compared to that obtained near the site of injection. The thyroid gland can be visualized in this way. According to the author, the possibility of air embolism is so remote that it need not be taken into account. Damage to blood vessels or viscera by the puncture is also unlikely.

Pulmonary Calcification.—Tuberculosis or Histoplasmosis?—Silverman calls attention to the limitations of roentgen examinations of the chest with respect to etiology. In natives of New York, there is a 90 per cent chance that roentgenologically demonstrable, intrathoracic calcifications are due to tuberculous infection, whereas in Cincinnati the chances are 3 to 1 that such an assumption would be wrong, because histoplasmosis, a disease that is prevalent there, may be responsible for intrathoracic calcifications. The author reviews the epidemiological features of histoplasmosis and discusses recent advances in the mycology of Histoplasma capsulatum. Previously considered as a rare, universally fatal disease, histoplasmosis is now recognized as a disease of wide distribution, generally nonfatal and often asymptomatic. Methods of diagnosis are discussed, and several unproved but probable cases are reported. Despite the possibility that infections with other fungi may result in histoplasmin sensitivity, a positive skin reaction in a person with roentgen signs of pulmonary infection who lives within the histoplasmin area places histoplasmosis high, if not first, on the list of differential diagnoses.

American Journal of Surgery, New York

80:491-612 (Nov.) 1950

Tumor of Major Duodenal Papilla. I. Wills, W. K. Jennings, G. S. Loquvam and W. O. Russell.—p. 493.
*Diagnostic Value of Blood Pattern in Cancer. H. L. Bolen.—p. 505.
Choledocholithiasis. H. S. Collett, H. D. Caylor and W. S. Tirman. —p. 514.
Early Postoperative Ambulation. A. M. Vaughn, A. C. Guzauskas and W. R. T. Metzner.—p. 523.
Factors in Etiology and Management of Postoperative Ventral Hernias. H. D. Trace, D. D. Kozoll and K. A. Meyer.—p. 531.
Inguinal Herniorrhaphy: Methods of Repair in Use at Present Time. J. E. Summers.—p. 540.
Primary Carcinoma of Liver. W. L. McNamara, W. H. Benner and L. A. Baker.—p. 545.
Sarcomas of Stomach. J. Rabinovitch, D. Grayzel, A. J. Swyer and B. Pines.—p. 550.
Acute Pancreatitis. J. Brinkman and H. Rosenfeld.—p. 556.
Improved Technic for Arthrodesis of Lumbosacral Spine. L. M. Overton.—p. 559.
New Method of Lipectomy for Abdominal Obesity. G. Bankoff.—p. 564.
Plastic Repair of Protruding Ears. R. A. Leonardo.—p. 568.
Simple Method of Blind Nailing for Fractured Neck and Femur. T. F. Keyes.—p. 571.
Appendicitis in Children. T. V. Morton Jr. and R. A. Kilby.—p. 576.
New Approach in Surgical Treatment of Tumors of Pineal Region: Posterior Coronal Flap. J. Negrin Jr.—p. 581.
Hemorrhoids. T. C. Case.—p. 584.

Diagnostic Value of Blood Pattern in Cancer.—For the test described by Bolen, the pulp of the middle finger is punctured. A glass slide is lightly touched to the finger tip. Three drops of blood are collected at intervals on the slide, which is set aside to dry, care being taken so that the drops are not smeared. If the drops are too thick, the test must be repeated, with less pressure applied to the finger tip. The dried drop of blood in noncancerous patients will show a dark mass centrally under high power magnification. In the drop of cancerous blood no mass can be discerned in the center. The blood breaks down into "dots." Further details of differentiation between blood from noncancerous and cancerous patients are shown in photographs of drops of blood. A normal pattern

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is characterized by the appearance of fibrin in a reticular network, rouleau formation, rapid blood spread, stability of the red blood cells and close, even mosaic pattern or meshwork. The criteria for a cancer pattern are absence of fibrin, lack of rouleau formation, viscid blood, agglutination of red blood cells and formation of lakes and islands interspersed with granules and spicules. The author summarizes the results obtained with this test on 800 persons, including healthy hospital personnel, patients with noncancerous disorders and 198 patients with proved cancer. In 191 of these 198 (96.5 per cent) the drop of blood showed a positive pattern of malignancy. In two of the apparently healthy persons the test brought to light the presence of an early malignant neoplasm (cervix and breast). This bedside or office test is simple, inexpensive and accurate. Little training is necessary. If the sample of blood is properly taken, accurately read and weighed with clinical evidence and laboratory and roentgenogram reports, every physician's office might become a detection center for cancer.

Arizona Medicine, Phoenix

7:1-88 (Nov.) 1950

Clinical Use of Antibiotics. P. H. Long, E. A. Bliss, E. B. Schoenback and others.—p. 27.
Functional Heart Disease. S. R. Elek.—p. 33.
Clinical Review of Mechanics of Low Back and Its Relationship to Low Back Pain with Special Reference to Intervertebral Disc. H. B. Macey.—p. 40.
Gonorrhea Acquired Via Rectal Intercourse: Case Report. R. A. Greene and E. L. Breazeale.—p. 48.

Cancer Research, Chicago

10:659-738 (Nov.) 1950

Use of Labeled Amino Acids in Study of Protein Metabolism of Normal and Malignant Tissues: Review. P. C. Zamecnik.—p. 659.
Transplantable Functional Ovarian Tumor Occurring Spontaneously in Rat. R. Iglesias, W. H. Sternberg and A. Segaloff.—p. 668.
Heterologous Growth of Sarcoma 180 with Progression to Death of Hosts. J. Patti and A. E. Moore.—p. 674.
*Estrone Conversion Capacity of Blood of Postmenopausal Women with Carcinoma of Breast. N. T. Werthessen, E. Schwenk, C. F. Baker and N. S. Field.—p. 679.
Polysaccharide Content of Serum Fractions in Carcinoma, Arthritis, and Infections. M. R. Shetlar, C. L. Shetlar, V. Richmond and M. R. Everett.—p. 681.
Attempts to Produce Gastric Carcinoma Experimentally in Gastric Ulcer. R. W. Denton, P. Sheldon and A. C. Ivy.—p. 684.
Effect of Xanthopterin and Related Agents on Proliferation of Rabbit Marrow Cells in Vitro. J. J. Biesele and R. E. Berger.—p. 686.
Cytoplasmic Proteins: Partial Physical and Chemical Characterization of Cytoplasmic Proteins. G. T. Barry.—p. 694.
Urinary Excretion of Mercapturic Acids After Administration of Bromobenzene and 3,4-Benzpyrene. H. R. Gutmann and J. L. Wood.—p. 701.
Bilateral Ovarian Teratomas in Mouse. D. W. Fawcett.—p. 705.
Effect of Storage at Low Temperature on Viability of Several Avian Lymphoid Tumor Strains. B. R. Burmester.—p. 708.
Growth Potentialities of Induced Skin Tumors in Mice: Effects of Different Methods of Chemical Carcinogenesis. P. Shubik.—p. 713.
Response of Transplanted Skin of Newborn and Suckling Mice to Application of 20-Methylcholanthrene. R. Silberberg and M. Silberberg. —p. 718.
Effect of Low Temperature on Morphology and Transplantability of Sarcoma 37. L. B. Walsh, D. Greiff and H. T. Blumenthal.—p. 726.

Estrone Conversion in Blood and Carcinoma of Breast.—During the investigation of the fate of estrone in blood and perfused organs, it was found that estrone was converted to a biologically inactive substance, which could no longer be assayed as a 17-ketosteroid. A study of the conditions under which this conversion could occur provided evidence supporting the hypothesis that an enzyme catalyzing the reaction is present in blood. The blood in samples from several human female donors did not induce the conversion. In each instance the donor had passed the menopause. Blood in samples from postmenopausal patients with carcinoma of the breast was found capable of inducing the conversion. The study reported by the authors was undertaken for gross determination of the extent of the divergence in blood level of this enzyme between normal postmenopausal women and those with carcinoma of the breast. Werthessen and his co-workers describe a semi-quantitative test of the estronase concentration in human blood, which they used in a comparison of the titer of normal postmenopausal blood and that of postmenopausal women with carcinoma of the breast. They found that the postmenopausal women with carcinoma of the breast can be expected to have a significantly higher blood titer of the enzyme than do normal postmenopausal women.

Diseases of Nervous System, Chicago

11:321-352 (Nov.) 1950

Clinical Correlates of Exceedingly Fast Activity in Electroencephalogram. E. L. Gibbs, F. M. Lorimer and F. A. Gibbs.—p. 323.
*Lobotomy in Management of Intractable Pain and Narcotic Addiction. E. A. Smolik.—p. 327.
Electronarcosis. J. D. Freund.—p. 332.
Psychoanalytically Oriented Institutional Treatment of Children. C. Sommer.—p. 336.

Lobotomy for Intractable Pain.—Smolik treated 20 patients with intractable pain by prefrontal lobotomy. Seven patients had intractable pain from nonmalignant sources. One of these patients had a demyelinating disease of the central nervous system, pain in all body segments, was emotionally tense and had suicidal tendencies. She had received a large amount of narcotics over a period of years. After prefrontal lobotomy she was relaxed and stopped asking for hypodermics; all suicidal tendencies were gone. Pain disappeared completely, and the patient was free from morphine addiction. Another patient, with intractable pain of tabetic origin, underwent bilateral prefrontal lobotomy, from which relief of pain resulted. In addition, the patient became cooperative and much more socially acceptable. Two patients who had lobotomy performed for post-trigeminal pain were therapeutic failures. Thirteen patients suffered from intractable pain secondary to carcinoma. Lobotomy was offered only as a last resort in all instances. One patient with carcinoma of the cervix associated with severe lymphedema of the vulva, one with squamous carcinoma of the tongue and one with inoperable cancer of the rectum obtained relief from pain and no longer required sedation. Their attitude of anxiety and worry had changed to one of indifference and calm. Two other patients with carcinoma of the cervix were total therapeutic failures, requiring postoperatively the same sedation as before the intervention. From the analysis of these 20 cases it appears that the primary effect of lobotomy is alteration of the patient's appreciation of pain or attention to it by alteration of his personality. The anxiety state is so ameliorated that the patient appears somewhat indifferent. Prefrontal lobotomy is a useful and effective procedure for relief of intractable pain in a selected group of patients, particularly those having carcinoma. In all instances when pain is relieved, associated narcotic addiction is abolished. Prefrontal lobotomy should be reserved for patients with intractable pain associated with an anxiety state. In this group of patients this technic is superior to the more exacting procedures, such as cordotomy and tractotomy.

Endocrinology, Springfield, Ill.

47:311-392 (Nov.) 1950

Studies on Metabolism of Radioprogesterone in Mice and Rats. B. Riegel, W. L. Hartop Jr. and G. W. Kittinger.—p. 311.
Gradation of Effectiveness and Absorption of Desoxycorticosterone Acetate Pellets by Dilution with Cholesterol. A. Segaloff.—p. 320.
Effect of Adrenal Enucleation on Serum Sodium. K. A. Brownell, F. A. Hartman and R. W. Reiman.—p. 326.
Beta-Glucuronidase Activity in Rat Uterus. S. L. Leonard and E. Knobil. —p. 331.
Adrenal Cortical Hormone Levels in Adrenal Vein- and Peripheral Blood. K. E. Paschkis, A. Cantarow, A. A. Walkling and D. Boyle.—p. 338.
Evaluation of Afferent Nervous Impulses in Adrenal Cortical Response to Trauma. M. L. Gordon.—p. 347.
Effect of Glucose on Adrenal Response to ACTH in Hypophysectomized Rats. P. Constantinides, C. Fortier and F. R. Skelton.—p. 351.
Influence of Hypophysectomy on Hemopoietic Response of Rats to Lowered Barometric Pressures. W. M. Feigin and A. S. Gordon. —p 364.
Androgenic Activity of Ovarian Transplants to Seminal Vesicle of Castrated Adult Male Rat. S. Katsh.—p. 370.

Georgia Medical Association Journal, Atlanta

39:435-472 (Nov.) 1950

Management of Traumatic Rupture and Stricture of Membranous Urethra Complicating Fracture of Pelvis. J. H. Semans.—p. 435.
Horizons of Modern Plastic Surgery. J. R. Lewis Jr.—p. 438.
Treatment of Fractures of Middle Third of Face. F. F. Kanthak. —p. 441.
*Early Signs and Symptoms of Brain Tumors. C. E. Dowman.—p. 443.
Relief of Distressing Pain by Interrupting Nerve Pathways. E. Walker. —p. 446.
Use of Antabuse in Treatment of Alcoholism: Preliminary Report of 27 Cases. J. N. Brawner Jr. and A. F. Brawner.—p. 449.
Doctors and the Public. J. E. Drewry.—p. 459.

Early Signs and Symptoms of Brain Tumors.—Headache of sufficient intensity to require potent medication should be investigated neurosurgically. Any convulsion or similar paroxysmal disorder beginning after the age of 20 is a symptom of brain tumor until proved otherwise. The ophthalmoscope should be used regularly by physicians so that abnormalities will be more quickly recognized. Bony skull masses strongly suggest underlying tumor. Deafness without explanation on a basis of infection should make one suspect eighth nerve tumor. The author cites a patient in whom the physician in charge regarded a brain tumor as impossible because she had had neither diplopia nor vomiting, although she had had convulsions for eight years, headache and, recently, blindness.

Illinois Medical Journal, Chicago

98:321-374 (Dec.) 1950

*Bursitis. T. T. Stone.—p. 335.
Trends in Tuberculosis Work. O. L. Bettag and M. R. Lichtenstein. —p. 337.
Rehabilitation of Stutterer. W. Johnson.—p. 341.
Medical Treatment of Epilepsy Today. J. S. Garvin.—p. 344.
Responsibilities of Physician—Problem of Medical Education. (Symposium). D. G. Anderson, S. H. Armstrong Jr., S. W. Olsen and others.—p. 350.
Results of Chest X-Ray Screening in Hospitals. J. E. Madden.—p. 354.
Tuberculosis of Acromioclavicular Joint with Subscapular Bursitis and Effusion. S. J. Taub, I. A. Friedman and J. B. Dibble.—p. 357.

Bursitis.—Stone says that most neurological textbooks do not mention bursitis and that this is one of the reasons that it is not readily diagnosed. He hopes that this report of 19 patients with bursitis will help practitioners to recognize this condition, because delay in recognition often causes unnecessary suffering. All of the patients studied complained of severe pain either in the arms or shoulders. Sixteen showed evidence of calcific deposits or shadows in the involved bursae. All of them made an excellent and permanent recovery with four or five roentgen irradiations. In three cases with no positive roentgen signs, a diagnosis of bursitis was made because of severe pain over the subdeltoid and acromial bursal regions. Roentgen irradiations also produced a cure in these three cases. The author feels that bursitis should be considered in the presence of pains in shoulder or arm and in the differential diagnosis of cervical rib, affection of the scalenus anticus muscle and various joint problems, such as arthritis, fractures, dislocations and neoplasms.

Journal of Bacteriology, Baltimore

60:511-680 (Nov.) 1950. **Partial Index**

Antiviral Activity of Newcastle Disease Immune Sera. R. P. Hanson, N. S. Winslow, C. A. Brandly and E. Upton.—p. 557.
Effect of Bovine Plasma Fractions on Growth of Mycobacterium Tuberculosis Var. Hominis. A. S. Youmans and G. P. Youmans.—p. 561.
Growth of Recently Isolated Strains of Mycobacterium Tuberculosis Var. Hominis in Liquid Media. G. P. Youmans and A. S. Youmans. —p. 569.
Energy Relationships in Carbohydrate Assimilation by Escherichia Coli. B. V. Siegel and C. E. Clifton.—p. 573.
Metabolism of Cystine and Cysteine by Proteus Vulgaris and Proteus Morganii. R. E. Kallio and J. R. Porter.—p. 607.
Structure of Leishmania Tropica as Revealed by Phase and Electron Microscopy. R. Lofgren.—p. 617.
Electron and Light Microscopic Studies of Bacterial Nuclei: III. Nuclear Sites in Metal-Shadowed Cells of Escherichia Coli. S. Mudd, A. G. Smith, J. Hillier and E. H. Beutner.—p. 635.
Development of Peptone Toxicity for Brucellae with Aging and Correlation of Toxicity with Probable Oxidation of Cystine. V. T. Schuhardt, L. J. Rode, G. Oglesby and C. E. Lankford.—p. 655.
Cultivation of Brucellae on Chemically Defined Media. L. J. Rode, G. Oglesby and V. T. Schuhardt.—p. 661.
Survey of Nuclease Production by Streptococci. A. L. Brown.—p. 673.

Journal of Clin. Endocrinology, Springfield, Ill.

10:1363-1522 (Nov.) 1950

Observations on Metabolic and Antiarthritic Effects of ACTH and Cortisone in Diabetics. E. M. Brown Jr., F. D. W. Lukens, J. R. Elkinton and P. DeMoor.—p. 1363.
Effect of Adrenocorticotropin and Cortisone on Thyroid Function: Thyroid-Adrenocortical Interrelationships. S. R. Hill Jr., R. S. Reiss, P. H. Forsham and G. W. Thorn.—p. 1375.
*Function of Adrenal Cortex in Myxedema, with Some Observations on Pituitary Function. H. Statland and J. Lerman.—p. 1401.
Simmonds' Disease: Report of Case Observed for Nine Years, with Postmortem Findings. D. L. Sexton, R. F. Morton and J. Saxton. —p. 1417.
*Radioiodine-Accumulating Function of Human Thyroid Gland as Diagnostic Test in Clinical Medicine. F. R. Keating Jr., S. F. Haines, M. H. Power and M. M. D. Williams.—p. 1425.
Glycogen in Human Testicular Biopsy Material: Preliminary Report. J. P. Arzac.—p. 1465.
Study of Family of Goitrous Cretins. J. B. Stanbury and A. N. Hedge. —p. 1471.
Interpretation of Goitrogenic Properties of Certain "Antithyroid" Agents. F. X. Gassner, M. L. Hopwood, E. A. Herrold and A. J. Plummer. —p. 1485.
Two Cases of Albright's Syndrome Observed in Brazil. W. Berardinelli. —p. 1499.
Absorption of Steroids from Subcutaneously Implanted Tablets of Pure Hormone and of Hormone Mixed with Cholesterol. F. Fuenzalida. —p. 1511.

Function of Adrenal Cortex and Pituitary in Myxedema.—The effect of hypothyroidism on pituitary and adrenal function was studied in 43 patients with myxedema due to primary thyroid failure. Cases of myxedema secondary to pituitary failure were excluded. Statland and Lerman measured pituitary and adrenal function during myxedema and again after thyroid substitution therapy to see whether any abnormality originally present had been corrected by therapy. Tests of pituitary function included measurement of follicle-stimulating hormone excretion in the urine, eosinophil response to epinephrine and insulin tolerance. Menstrual history was also taken. Tests of adrenal cortical function included determination of 17-ketosteroid and 11 oxycorticosteroid excretion, blood electrolyte levels, eosinophil response to epinephrine and insulin tolerance along with performance of the Cutter-Power-Wilder test. Thyroid function was studied by determination of basal metabolic rate, blood cholesterol and serum protein-bound iodine. Roentgenograms of the epiphyses were obtained when indicated. The following combinations of glandular dysfunction were found: 1. Primary myxedema without dysfunction of either pituitary or adrenal. This occurs apparently only in cases with recent onset. 2. Primary myxedema with secondary depression of adrenocortical function. This depression almost always involves the androgenic hormone, the corticosteroids often and the electrolyte hormone occasionally. 3. Primary myxedema with secondary depression of the pituitary. This may result in diminished excretion of follicle-stimulating hormone in menopausal women and in amenorrhea in premenopausal women. The possibility that depression of adrenal function in the preceding group is by way of the pituitary must be considered. 4. Association of primary myxedema and Addison's disease with normal pituitary function. 5. A final combination, not studied in this series, is primary hypopituitarism with secondary myxedema and adrenocortical failure.

Diagnostic Value of Radioiodine Test in Thyroid Disease.—A careful statistical evaluation of the radioiodine test as a diagnostic aid in thyroid disease has been carried out by Keating and co-workers. The ability of the thyroid gland to accumulate ingested radioiodine was studied in 790 patients. This ability was significantly increased in patients who had toxic diffuse goiter or adenomatous goiter with hyperthyroidism and significantly reduced in those with myxedema. Significant elevation was also encountered in some patients who did not have hyperthyroidism (adenomatous goiter without hyperthyroidism, colloid goiter, hyperplastic thyroid nodules and thyroid hyperplasia resulting from antithyroid drugs). Significant depression was encountered in the absence of clinical hypothyroidism (renal insufficiency, cardiac decompensation, Addison's disease, acute diffuse thyroiditis and Riedel's, or chronic, thyroiditis). Depression also occurred after the ingestion of inorganic iodine or the administration of gallbladder dye. Thyroid and anti-

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thyroid drugs interfered with the test. Normal values of radioiodine accumulation were observed in most cases of adenomatous goiter without hyperthyroidism, in half the cases of adenomatous goiter with hyperthyroidism, in a few cases of toxic diffuse goiter and in some cases of myxedema. In spite of these exceptions the test was 90 per cent efficient in the diagnosis of toxic diffuse goiter. It was comparatively inefficient in establishing the presence or absence of hyperthyroidism in adenomatous goiter and was only 50 per cent efficient in diagnosis of myxedema. It was comparable but not superior to the basal metabolic rate as a measure of thyroid function. Because of the difficulties and hazards of the method, it will probably supplement rather than supplant other diagnostic aids. Four methods of measuring radioiodine accumulation were compared: (1) 48 hour urinary excretion studies, (2) determination of extrarenal disposal rate, (3) in vivo measurements of the radioiodine accumulation in the thyroid 24 hours after administration and (4) determination of the in vivo accumulation rate. All four methods were about equally sensitive diagnostically.

Journal of Clinical Investigation, Cincinnati

29:1421-1558 (Nov.) 1950

Net Splanchnic Glucose Production in Normal Man and in Various Disease States. J. D. Myers.—p. 1421.
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Id.: V. Respiratory Dead Space in Old Age and in Pulmonary Emphysema. W. S. Fowler.—p. 1439.
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13:395-494 (Nov.) 1950

Elementary Vestibulo-Ocular Reflex Arc. J. Szentágothai.—p. 395.
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Termination of Spinal Afferents to Inferior Olive in Cat. A. Brodal, F. Walberg and T. Blackstad.—p. 431.
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Nitrogen, Methionine and Cystine Content of Hen's Eggs: Their Distribution in Egg White and Yolk. F. A. Csonka.—p. 443.

Journal of Urology, Baltimore

64:633-730 (Nov.) 1950

Studies on Nature of Urinary Calcium: Its Role in Calcium Urolithiasis. R. H. Flocks.—p. 633.
*Hyperparathyroidism and Urolithiasis. D. E. Beard and W. E. Goodyear.—p. 638.
Treatment of Ureterocele in Adults. J. W. Merricks and R. H. Herbst.—p. 643.
Cyto-Dynamic Properties of Urinary Neoplasms: I. Cultivation in Vitro of Transitional Cell Carcinoma of Ureter. R. G. Bunge and R. J. Stein.—p. 646.
Bladder Tumors: Survey of 373 Cases. J. I. Waller and H. G. Hamer.—p. 651.
Adenomatoid Tumors of Bladder Reproducing Renal Structures (Nephrogenic Adenomas). N. B. Friedman and H. Kuhlenbeck.—p. 657.
Treatment of Carcinoma of Prostate. G. G. Smith.—p. 671.
Sarcoma of Prostate in Children with Report of a Case of Rhabdomyosarcoma in Four Year Old Boy. H. O. Mertz, R. D. Howell and R. C. Hammond.—p. 681.
Clinical Findings in 127 Cases of Teratoma of Testis. C. P. Gray, G. J. Thompson and J. R. McDonald.—p. 690.
Painful Malignant Tumor of Testis With and Without Hemorrhage. W. A. Milner and J. B. Gilbert.—p. 697.
Double Penis Associated with Supernumerary Kidney. A. A. Solomon, I. Rosenthal and M. H. Linker.—p. 705.
Carcinoma of Female Urethra. C. B. Brack and G. J. Farber.—p. 710.
Hereditary Diabetes Insipidus: Unusual Urinary Tract Changes. C. G. Weller, W. Elliott and A. Rodriguez Gusman.—p. 716.
Multiple Fibroma of Tunica Vaginalis: Case Report. M. Labess.—p. 722.
Phenolsulfonphthalein Determination in Presence of Gross Hematuria. M. Marshall Jr. and J. R. Barr.—p. 725.

Hyperparathyroidism and Urolithiasis.—Beard and Goodyear designate as erroneous the belief that hyperparathyroidism is rare and that it is rarely responsible for renal calculi. They believe that all patients with renal or ureteral calculi should be studied for the possible existence of hyperparathyroidism. The concept of multiple, bilateral renal calculi as characteristic of the disease is no longer tenable, for a patient with a single calculus is just as likely to have hyperparathyroidism. The authors studied 150 patients with urolithiasis and found that 12 (8 per cent) had hyperparathyroidism. In this group of 12 cases, only three patients had bilateral calculi. The practice of considering hyperparathyroidism only in those patients with bilateral, multiple or recurring calculi is responsible for the apparent rarity of the condition. Bone changes of osteitis fibrosa cystica are present in only one third of the cases, and the majority have no pathological changes of the bones demonstrable by roentgenography. Symptoms are few and not characteristic. Physical observations do not aid in diagnosis. Parathyroid tumors are almost never palpable. The demonstration of hypercalcemia, hypophosphatemia and hypercalciuria is the basis for diagnosis.

Maine Medical Association Journal, Portland

41:413-440 (Nov.) 1950

Diagnosis of Intestinal Obstruction. M. Hirshler.—p. 413.
Reflex Respiratory and Circulatory Disturbances in Anesthetised Patients. D. Martel.—p. 416.
NPH Insulin. P. R. Chevalier.—p. 419.
Significance to Physician of Gingival Bleeding. M. S. Strock.—p. 420.
Statistical Review of Abortions. E. Kay.—p. 422.
Roentgen Therapy of Inflammatory Lesions and Non-Malignant Diseases. S. Bluhm.—p. 423.

Medical Annals of District of Columbia, Washington

19:601-662 (Nov.) 1950

Quintuplets and Fecundity. J. B. Nichols.—p. 601.
Dyspareunia. R. Biereg.—p. 608.
*Reinfection Tuberculosis According to Age and Race Among 31,400 Selectees in the District of Columbia. W. L. Dunn.—p. 612.
Liver Functions and Tests. A. Horwitz.—p. 615.
Sir Dominic Corrigan and Deformed Heart Valves. E. Podolsky.—p. 621.

Reinfection Tuberculosis Among Selectees.—Soon after the Selective Service Act became law, arrangements were made for the making of roentgenograms of each selectee in the District of Columbia. During one year, 31,400 males between the ages of 21 and 35 were examined by the photofluorographic method with 4 by 5 inch films. Each film was read by at least two clinicians. The men having positive or suspicious films were ordered to return for 14 by 17 inch films, which also were read by at least two clinicians. Reinfection tuberculosis was found in 311 (about 1 per cent) of 31,400. This figure does not include men rejected for pulmonary calcifications. Of the 311 men with reinfection tuberculosis, 187 (57 per cent) had minimal lesions, 90 (29 per cent) had moderately advanced lesions and 43 (14 per cent) had far advanced lesions. Whereas the incidence of reinfection tuberculosis among Negroes in this study is only slightly higher than in whites, in 1942 the death rate in this area was 5.5 times higher among Negroes. The incidence of reinfection tuberculosis was higher in the age group 25 to 29 than in the age group 30 to 35. This observation is at variance with many reports in the literature, but no explanation is given.

Military Surgeon, Washington, D. C.

107:345-430 (Nov.) 1950

The Armed Forces Institute of Pathology: Its Role in American Medicine. R. O. Dart.—p. 345.
Airborne Medicine. S. H. Neel Jr.—p. 361.
*Two-Stage Fibular Transplant for Persistent Nonunion and with Gross Loss of Tibia: Report of 5 Cases. K. Dunlap and E. F. Wierzalis.—p. 365.
Role of Muscle Flaps in Treatment of Chronic Osteomyelitis. J. S. Thiemeyer Jr.—p. 374.
Managing Fatigue. E. Podolsky.—p. 380.
Simple Method of Treatment for Recent Mallet Finger. R. E. Van Demark.—p. 385.
Frostbite. W. G. Brandstadt.—p. 386.
Field Training of Army Medical Officers. R. W. Bliss.—p. 388.
Army Field Surgeon, Specialist. R. P. Williams.—p. 390.

Fibular Transplant for Nonunion of Tibia.—Dunlap and Wierzalis describe a modification of the two stage operative procedure of transplantation of fibula to tibia. They report five cases in which they used this method. Four were cases of persistent nonunion and one case was of gross tibial loss. Bony union resulted at the site of the nonunion in four cases, while supplementary bone graft operations were used with good success in the fifth. A fibular transplant should be more often used in the treatment of persistent nonunion of the tibia and should not be reserved for cases with gross tibial defects. Fibular transplantation should also be considered in infected pseudarthrosis without much loss of tibial substance, in pseudarthrosis remaining after previous grafts have failed and in congenital pseudarthrosis. The graft is never a free graft, as one end remains in contact with its own blood supply from both the nutrient and the periosteal vessels. It is much more resistant to infection and does not sequestrate as does a free graft. It grows in accordance with its new function, obeying Wolff's law. The authors feel that if the two stage fibular transplant is properly performed, a successful result is almost assured.

New England Journal of Medicine, Boston

243:763-798 (Nov. 16) 1950

Surgical Trends Since Turn of Century. C. G. Mixter.—p. 763.
Plasmacytic Leukemia: Report of Case. N. P. Hill and C. Van Zandt Hawn.—p. 769.
*Aureomycin in Treatment of Common Cold. R. J. Hoagland, E. N. Deitz, P. W. Myers and H. C. Cosand.—p. 773.
Effect of Water-Soluble Preparations of Vitamin K in Dicumarol-Induced Hypoprothrombinemia. S. Shapiro, M. Weiner and G. Simson.—p. 775.
Nutrition and Disease of Liver. C. S. Davidson and G. J. Gabuzda Jr.—p. 779.

Aureomycin in the Common Cold.—A carefully controlled study of the effects of aureomycin on the common cold was carried out in a group of 309 young men in military service. All patients reported for sick-call on the first morning after symptoms of a cold appeared. Half the patients were given aureomycin capsules, the other half identical yellow capsules containing an inert substance to be taken four times daily. During part of the study the single dose of aureomycin was 250 mg.; later it was 500 mg. There was no difference in the effectiveness of the two doses. Cures within 24 hours were reported by 10.4 per cent of the patients given aureomycin and by 9.7 per cent of the patients receiving placebos. Similarly, there was no significant difference in the number of patients reporting slight or no benefit from the two types of capsules. Apparently, there was no more improvement in patients treated with aureomycin than in those treated with placebos. The authors stress the importance of careful control of as many factors as possible in evaluation of any remedy for this variable disease.

243:799-842 (Nov. 23) 1950

*Evaluation of Aureomycin Therapy in Primary Atypical Pneumonia. E. B. Schoenbach, A. Sweed, B. Tepper and M. S. Bryer.—p. 799.
*Experiences with Dicumarol in Acute Myocardial Infarction. E. Bresnick, L. A. Selverstone, B. Rapoport and others.—p. 806.
Splenomegaly with Hypersplenism Due to Sarcoidosis: Report of Case. R. C. Partenheimer and H. C. Meredith Jr.—p. 810.
Importance of Recognizing Post-Infarctional Shoulder-Hand Syndrome. W. R. Chitwood.—p. 813.
Laboratory Diagnosis of Polycythemia and Anemia. T. H. Ham, W. B. Castle, F. H. Gardner and G. A. Daland.—p. 815.

Aureomycin in Primary Atypical Pneumonia.—Schoenbach and co-workers compared the results of treatment with penicillin or sulfonamide compounds in 22 patients with primary atypical pneumonia with results obtained in 33 consecutive patients with the same disease treated with aureomycin. All except one had confirmatory evidence of pneumonia on roentgenologic examination. Six patients treated with both penicillin and aureomycin concomitantly were not included in either group but were considered separately. The groups were comparable in sex, age, duration of disease before hospitalization, temperature on admission, degree of pulmonary involvement and development of cold hemagglutinins. The average duration of fever during the hospital period was 6.4 ± 0.85 days for the group treated with penicillin or sulfonamide compounds and 3.1 ± 0.07 days for the aureomycin group. The average duration of fever in the latter group was 1.8 ± 0.23 days after the beginning of aureomycin therapy. The total duration of the febrile period was also materially shortened in the aureomycin-treated group, with an average period of 7.8 ± 0.89 days from onset of illness to defervescence. In contrast, the patients not receiving aureomycin were febrile for an average period of 13.0 ± 0.94 days. No significant toxic reactions to aureomycin were noted, although 11 patients complained of nausea, four vomited and an additional four experienced mild diarrhea. The authors' results confirm previous reports that aureomycin shortens the duration of the febrile period in primary atypical pneumonia.

Bishydroxycoumarin (Dicumarol®) in Acute Myocardial Infarction.—Bresnick and co-workers report on 250 patients with acute myocardial infarction, 122 of whom were treated with bishydroxycoumarin (dicumarol®), while 128, who were treated without anticoagulants, served as controls. The two groups showed no significant difference regarding sex, age or average length of hospital stay, either in fatal cases or in survivors. The average duration of bishydroxycoumarin therapy was 27 days in surviving patients and 11 days in those dying during treatment. The average daily dose ranged from 34 to 150 mg.

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Of the 128 control patients, 26 (20.3 per cent) experienced 32 thromboembolic episodes. Of the 122 treated patients, 19 (15.6 per cent) had 26 such episodes complicating their course. The greater incidence of peripheral arterial emboli and of detectable phlebothrombosis in the control group was striking. Bishydroxycoumarin therapy did not improve the mortality rate. It is of some significance that six of the 16 deaths (37.5 per cent) in the control group were directly attributable to thromboembolic phenomena. Four of the 23 deaths in the treated group (17.4 per cent) could be so attributed. Bishydroxycoumarin failed to improve significantly the prognosis of patients with acute myocardial infarction. There was a general failure in maintenance of even and consistent prolongation of prothrombin times at therapeutic levels. The apparent inefficacy of the anticoagulant was due for the most part to this fact. The most obvious reason for the difficulty with prothrombin is the widely variable individual difference in response and tolerance to the drug. The prothrombin activity is all too commonly allowed to rise above the low therapeutic levels before the administration of adequate dosage of bishydroxycoumarin has been continued. The dangers in the inadequate supervision of this therapy were emphasized by two deaths attributable to hypoprothrombinemia. Postmortem examination of 11 treated and eight control patients showed the efficacy of well controlled bishydroxycoumarin therapy in reduction of thromboembolic manifestations.

New York State Journal of Medicine, New York

50:2479-2606 (Nov. 1) 1950

Early Diagnosis and Treatment of Early Cancer of Cervix. P. A. Younge. —p. 2519.
Effect of Treatment on Incidence of Abortion. C. L. Randall, R. W. Baetz, D. W. Hall and P. K. Birtch.—p. 2525.
*Management of the Pregnant Cardiac Patient. J. T. Wallace.—p. 2531.
Pregnancy with Tuberculosis—Management and Prognosis. J. M. Blake. —p. 2536.
Role of Sterilizing Solution in Cauda Equina Syndrome Following Spinal Anesthesia. P. W. Searles and W. K. Nowill.—p. 2541.
*Effect of Early Ambulation on Recurrence Rate of McVay Hernioplasia. F. R. Cole.—p. 2545.
Concerning Neurologic Complications Following Spinal Anesthesia. A. M. Rabiner.—p. 2546.
Patella Advancement for Spastic Flexion Contracture of Knee. A. A. Michele and F. J. Krueger.—p. 2550.
Needle for Use in General Surgery. H. Elcaness.—p. 2551.
Surveys of Ragweed Pollination in New York Metropolitan District in 1948 and 1949. R. D. Wiseman, B. B. Siegel, I. Glazer and others. —p. 2552.
Dicumarol and Sediment..tion Rate. W. Hoffman and A. E. Welberry. —p. 2556.

Management of Pregnancy During Heart Disease.—The incidence of heart disease in pregnant women jn the Brooklyn Hospital is approximately 2 per cent. Of these cases, 93 per cent are of rheumatic origin. The remainder are of congenital, syphilitic and arteriosclerotic types. A correct diagnosis is essential for proper care of these patients. The history should be studied carefully, the physical examination should include roentgen or fluoroscopic examination, or both, and electrocardiographic studies should be made to detect abnormal rhythms, block or changes in the RST segment. The following factors make the prognosis more unfavorable: a history of previous failure or presence of failure at the time of examination, auricular fibrillation, age over 35, long duration, a very large heart, active rheumatic fever within one year of the pregnancy and presence of acute carditis. Heart disease of even the mildest type, when complicated by pregnancy, is fraught with hazard more serious than is often realized. Patients should be seen at frequent intervals. Infection, toxemia and excessive weight gain should be avoided and, if present, promptly treated during the prenatal period. The strain of the first stage of labor may be lessened by good analgesia; the second stage should be shortened as much as is commensurate with safety to mother and baby. The third stage of labor should be handled somewhat differently than in the normal woman. Only the oxytocic fraction of posterior pituitary (pituitrin®) should be used, and ergonovine (ergotrate®) maleate should be avoided in the older woman and in the arteriosclerotic. The puerperium should be characterized by a longer period of bed rest and hospitalization than is at present prescribed for normal women. Adequate help should be provided for the cardiac patient when she returns to her home with a newborn baby. Indications for prevention of pregnancy and therapeutic interruption are presented and methods for their accomplishment discussed.

Early Ambulation in Hernioplasty.—Cole believed early ambulation could be ideally used with the McVay type of hernioplasty, especially since he used unabsorbable suture material, either silk or cotton. He presents observations on 41 patients with hernia who were operated on over a three year period and who were followed up for from nine months to three years. Two of the patients had a femoral hernia; the others had inguinal hernias, of which 28 were of the direct type. In all these cases the transversalis fascia and/or conjoint tendon were sutured to Cooper's ligament and the external oblique to Poupart's ligament, with the cord subcutaneous. There were no complications or recurrences.

50:2607-2750 (Nov. 15) 1950. **Partial Index**

Treatment of Skin Cancer. G. C. Andrews and A. C. Cipollaro. —p. 2674.
Practical Application of Genetics to Dermatology. D. Bloom.—p. 2675.
Recent Advances in Dermatologic Therapy. F. C. Combes and J. M. Costello.—p. 2678.
*Treatment of Psoriasis as Disturbance of Lipid Metabolism: Further Observations on Lipotropic Therapy Based on 10-Year Clinical Study. P. Gross and B. M. Kesten.—p. 2683.
Some Facts and Fallacies Relating to Superficial Fungous Disease. G. M. Lewis, W. Sachs and M. E. Hopper.—p. 2686.
Role of Antihistaminic Drugs in Producing Cross-Sensitization Dermatitis. S. M. Peck.—p. 2690.
Fifty Years' Progress in Treatment of Syphilis. I. Rosea and N. Sobel. —p. 2694.
Hysterography and Hysterosalpingography: Evaluation of 2,500 Cases. M. A. Goldberger, R. Marshak and A. Davids.—p. 2697.
*Rising Incidence of Cesarean Section and Effect on Maternal and Infant Mortality. W. Levine and S. Zeichner.—p. 2707.
Sepsis Following Incomplete Abortion. P. M. Murray and L. B. Winkelstein.—p. 2714.
Technic of Circumcision with Special Clamp. M. Leff.—p. 2721.

Psoriasis and Lipid Metabolism.—To evaluate the theory that psoriasis is associated with a disturbance of lipid metabolism, Gross and Kesten studied the response of 235 psoriatic patients to lipotropic therapy. All patients were given soybean lecithin either in crude form or as granulestin (purified, granulated soya phosphatide, 80 per cent, with added vegetable stabilizer) in doses of 15 to 60 Gm. daily (supplying an average of 0.6 Gm. each of choline and inositol). Vitamins A, D and B complex were added in many cases, and crude liver extract was given to patients with liver disease or alcoholism. A few patients with a basal metabolic rate below —15 received thyroid extract. Reducing diets were employed for the obese, and all patients were given a diet low in animal fats and cholesterol. Topical applications to the skin lesions were used in some cases, but many responded to internal treatment alone. Therapy was continued for an average of one year. Of the 155 patients who received adequate treatment, 23 (15 per cent) were free of all lesions during an average follow-up period of two and one-half years; 95 (61 per cent) improved but retained a few persistent lesions or had partial remissions, and 37 (24 per cent) were unimproved. Serum cholesterol levels, elevated in 25 per cent of untreated psoriatic patients, were reduced during therapy in 58 per cent. The concentration of total lipids in the skin of untreated psoriatics was normal, but there was an increase in the ratio of cholesterol to total lipids. Positive cephalin flocculation reactions reverted to negative during treatment in six of seven patients tested. The authors conclude that lipotropic therapy corrects some of the metabolic defects in psoriasis but does not cure the disease.

Incidence and Mortality of Cesarean Section.—Two consecutive 10 year surveys, embracing a total of 38,775 deliveries at Beth-El Hospital, Brooklyn, N. Y., reveal that the incidence of cesarean section rose from 0.9 per cent in the first 10 year period to 2.7 per cent in the second. At the same time the maternal mortality rate has been reduced from 9.7 per cent to 1 per cent. The rising incidence of sections is due primarily to earlier operation in cephalopelvic disproportion (37 per cent of all sections in the current series), the more frequent termination of pregnancy for severe toxemia (5 per cent) and the

use of this operation for the treatment of placenta previa (15 per cent). Other occasional indications are discussed. The decrease in maternal mortality is due to (1) improved surgical technics, (2) newer extraperitoneal approaches to the lower uterine segment, (3) more accurate clinical and roentgenologic pelvimetry, (4) more easily available compatible blood, (5) improved methods of anesthesia, (6) the liberal use of antibiotics and (7) the avoidance of frequent vaginal examinations. Operative methods of choice in this series were the low cervical section and the paravesical extraperitoneal section, both performed under fractional spinal anesthesia. Of the seven maternal deaths in the past 10 years, four were due to infection, one to cardiac failure, one to uremia and one to massive pulmonary embolism. Fetal mortality was 5.8 per cent in the current series; 2.2 per cent were stillbirths, and 3.6 per cent neonatal deaths. The majority of these infants died because of prematurity, antepartum bleeding being the indication for operation.

Ohio State Medical Journal, Columbus

46:1037-1140 (Nov.) 1950

Problem of the Cross-Eyed Child. L. V. Kogut.—p. 1061.
Relation of Blood Cholesterol to Basal Metabolic Rate. R. W. Kissane, R. Brooks and T. E. Clark.—p. 1063.
Psychosocial Factors in Pathogenesis of Peptic Ulcer in an 87-Year Old Man. C. K. Hofling.—p. 1064.
Posture—Its Role in Obstetrics and Gynecology. L. B. Greentree. —p. 1066.
Aneurysm of Left Common Iliac Artery Producing Thrombosis of Spermatic Artery and Vein with Review of Literature. P. J. Shank. —p. 1069.
Solitary Nonparasitic Cyst of Liver. H. H. Pevaroff.—p. 1071.
Control of Diabetes: Glycosuria an Unreliable Index to Glycemia. H. J. John.—p. 1073.
Pericarditis Complicating Pregnancy: Case Report. D. H. Greegor. —p. 1077.
Acute Fibrinous Bronchitis with Massive Atelectasis. F. W. Merica. —p. 1079.
The Physician and Privileged Communications as They Relate to Mental State. E. H. Crawfis.—p. 1082.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

75:305-626 (Nov.) 1950. **Partial Index**

Persistence of Neutralizing Antibody for Year Following Vaccination of Monkeys with Lansing Poliomyelitis Virus. I. M. Morgan.—p. 305.
Hyperpigmentation in Acute Leukemia Treated with Folic Acid Antagonists. H. A. Waisman, J. B. Richmond and A. A. Zimmerman. —p. 332.
Role of Detergent Complexes in Experimental Gastric and Duodenal Ulcers. S. J. Fogelson and O. E. Lobstein.—p. 334.
Effects of Cortisone, Hyaluronidase, Desoxycorticosterone, and Artisone on Experimental Serum Disease in Rabbits. J. Seifter, W. E. Ehrich, A. J. Begany and G. H. Warren.—p. 337.
*Effects of Antibiotics in Mortality from Internal Radiation. S. Koletsky and J. H. Christie.—p. 363.
Treatment of Pernicious Anemia with Crystalline Vitamin B_{12}. L. M. Meyer, A. Sawitsky, H. Fink and others.—p. 366.
Inhibition of Phagocytosis by Aureomycin. J. Munoz and R. Geister. —p. 367.
Cytopathogenic Effect of Poliomyelitis Viruses in vitro on Human Embryonic Tissues. F. C. Robbins, J. F. Enders and T. H. Weller. —p. 370.
Action of Adrenocorticotropic Hormone (ACTH) in Experimental Allergic Encephalomyelitis of Guinea Pig. A. W. Moyer, G. A. Jervis, J. Black and others.—p. 387.
Effect of Adrenocorticotropic Hormone, Cortisone and Desoxycorticosterone on Brain Excitability. D. M. Woodbury and G. Sayers. —p. 398.
Effect of Cortisone and Adrenocorticotropic Hormone (ACTH) on Experimental Scurvy in Guinea Pig. G. A. Hyman, C. Ragan and J. C. Turner.—p. 470.
*Acute Necrosis and Malformation of Developing Mammalian Brain Caused by X-Ray. S. P. Hicks.—p. 485.
Mustard Inactivated Rabies Vaccine. C. Tenbroeck and R. M. Herriott. —p. 523.
Influence of Age, Sex, and Season upon Radioiodine Uptake by Human Thyroid. E. H. Quimby, S. C. Werner and C. Schmidt.—p. 537.
Blood Levels of I-131 After Tracer Doses in Diagnosis of Hyperthyroidism. S. Silver and M. H. Fieber.—p. 570.
*Course of Experimental Tuberculosis in Albino Rat as Influenced by Cortisone. M. Michael Jr., M. M. Cummings and W. L. Bloom. —p. 613.

Antibiotics and Internal Radiation.—Rats dead of poisoning with radioactive phosphorus P^{32} commonly show bacterial lesions at autopsy. Because of the possibility that bacterial toxemia might play a role in radiation death, an investigation was made of the protective effect of antibiotics. A total of 248 rats weighing about 175 Gm. each were divided into 124 treated rats and 124 untreated controls. Radioactive phosphorus was injected intraperitoneally in amounts ranging from 3 to 6 microcuries per gram of body weight. Streptomycin and penicillin were employed in combination, since the tissue lesions showed both gram negative bacilli and gram positive cocci. The doses were 12 mg. of streptomycin twice daily and 20,000 units of penicillin every other day, given intramuscularly. Streptomycin and penicillin in combination proved effective in reducing the mortality of rats given lethal doses of radioactive phosphorus. Morbidity was also reduced and survival time prolonged.

Effects of Roentgen Ray on Embryo Brain.—That neuroblasts might be radiosensitive has been indirectly suggested by the therapeutic effects of irradiation on neurogenic embryomas such as neuroblastoma and medulloblastoma; also, it is widely believed that microcephaly and other failures of development of the human nervous system may follow irradiation of the embryo in utero. The experiments described by Hicks consisted in administration of total body radiation to pregnant white rats and mice at varying stages of gestation. Irradiation resulted in acute necrosis of the rapidly growing parts of the brain, spinal cord and retinas of the fetuses. This developed within a few hours, was highly selective for the central nervous system and was often severe and extensive with a dose of 200 to 600 r. With 140 r, damage was less and was followed in two days by malformations in the neuroblastic zones. Fetuses allowed to go to term and killed after days or weeks showed severe maldevelopments of corpus callosum, hippocampus, striatum and cerebral cortex. Externeural lesions were absent below 200 r and rare at 400 r. Below 100 r no destructive lesions occurred. The reasons for the acute radionecrosis in the fetal central nervous system are obscure, but the cells in the areas affected are not only rapidly multiplying but are also rapidly growing and differentiating. Protein synthesis is especially active in development of nerve cells. It appears that the developing brain is by far the most radiosensitive tissue in the rat and mouse fetus in the latter half of gestation.

Effect of Cortisone on Experimental Tuberculosis.—The investigations of Michael and his associates suggest that tuberculosis in the naturally resistant rat may be altered by cortisone administration. The untreated albino rat responds to infection with virulent human tubercle bacilli with a chronic, granulomatous, nonfatal process in which caseation is inconspicuous. Indeed, in some strains no gross or microscopic lesions develop, despite the fact that tubercle bacilli can be cultured from the tissues and blood as long as 120 days after inoculation. Rats treated with cortisone, on the other hand, and similarly infected with tubercle bacilli die of tuberculosis in the majority of cases. Striking histological differences are noted. Localized granulomas are seen in the organs of rats given injections only with tubercle bacilli, whereas the lesions in the animals also receiving cortisone are diffuse and contain fewer inflammatory cells. The influence of cortisone on experimental tuberculosis appears to be a lowering of the host's natural resistance.

Public Health Reports, Washington, D. C.

65:1537-1572 (Nov. 24) 1950

Control of Norway Rats with Residual Rodenticide Warfarin. W. J. Hayes Jr. and T. B. Gaines.—p. 1537.
Industrial Sickness Absenteeism: Males and Females, 1949, and Males, First and Second Quarters 1950. W. M. Gafafer.—p. 1556.

65:1573-1608 (Dec. 1) 1950

Community-Wide Chest X-Ray Survey: II. Nursing. Z. Bryant and G. S. Jones.—p. 1573.
Bactericidal Effect of Surface-Active Agents on Tubercle Bacilli. C. R. Smith, H. Nishihara, F. Golden and others.—p. 1588.

65:1609-1656 (Dec. 8) 1950

Public Health: 1950. A Selected Report of the 78th Annual Meeting of the American Public Health Association and Related Organizations, St. Louis, Mo., Oct. 30-Nov. 3, 1950. Prepared by H. Ennes.—p. 1609.

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South Dakota Journal of Medicine, Sioux Falls

3:321-356 (Nov.) 1950

Pathology of Chest and Mediastinal Tumors. F. C. Helwig.—p. 321.
Tumors of Head and Neck. J. R. McDonald and D. L. Alcott.—p. 327.
Pregnancy in Course of Hodgkin's Disease. J. E. Summers and E. H. Shaw.—p. 336.

3:357-392 (Dec.) 1950

Actions of Organically Bound Iodine (Organidin) in Man. D. Slaughter, W. C. Grover and R. Hawkins.—p. 357.
Bunnell Operation for Opponens Paralysis. R. E. Van Demark.—p. 362.

Surgery, St. Louis

28:781-940 (Nov.) 1950

*Abdominal Actinomycosis: Analysis of 122 Cases. H. C. Putman Jr., M. B. Dockerty and J. M. Waugh.—p. 781.
Tracheotomy in Management of Severe Head Injuries. D. H. Echols, R. Llewellyn, H. D. Kirgis and others.—p. 801.
Disinfecting Action of pHisoderm Containing Three Per Cent Hexachlorophene on Skin of Hands. T. C. Chisholm, T. L. Duncan, C. A. Hufnagel and C. W. Walter.—p. 812.
Experimental Occlusion of Superior Mesenteric Vessels with Special Reference to Role of Intravascular Thrombosis and Its Prevention by Heparin. L. E. Nelson and A. J. Kremen.—p. 819.
Portal Venography. G. E. Moore and R. B. Bridenbaugh.—p. 827.
*Surgical Management of Chronic Indurated Cellulitis of Lower Extremity (Indurated Leg). E. L. Lowenberg.—p. 832.
Pilonidal Cyst: Comparison of Surgical Treatments. A. Kleiman. —p. 851.
Double-Lumen T Tube for Common Duct: Continuous Drainage and Reintroduction of Bile in Dog. E. S. Sinaiko and N. C. Jefferson. —p. 857.
The Brown Electrodermatome: New Instrument. H. T. Caswell, G. P. Rosemond and W. E. Burnett.—p. 860.
New Bayonet Clamp for High Gastric Resection. I. Goni-Moreno. —p. 863.
*Traumatic Rupture of Aorta: Report of Case in Which the Patient Survived for 81 Days. B. Bradford Jr. and F. L. Johnston.—p. 893.

Abdominal Actinomycosis.—From the literature and from a study of 122 cases of abdominal actinomycosis Putman and co-workers have drawn the following conclusions. The causative organism, Actinomyces bovis, exists as a saprophyte in the mouth, respiratory tract and gastrointestinal tract of man and animals. It becomes pathogenic only if it penetrates a break in the mucous membrane produced by trauma or disease. Thus most cases of abdominal actinomycosis follow acute perforative or ulcerative disease of the gastrointestinal tract. The organism spreads by direct extension through adjacent tissue. Microscopic identification and culture of the organism are essential in the diagnosis. This uncommon disease occurs most frequently in men in the second to fifth decades. It has a wide geographic distribution and affects persons in all occupations. Treatment consists of the administration of 1,000,000 units of penicillin daily for four to eight weeks supplemented by a diet high in vitamins, calories and proteins, and multiple whole blood transfusions. Sulfadiazine should probably also be used because of its inhibiting effect on A. bovis and on the contaminating bacteria that are always present. Surgical drainage of abscesses is essential, and resection of abdominal granulomas may be necessary if relapse occurs. The rate of cure or improvement in this series of patients was 95.8 per cent when penicillin was used alone, 38.7 per cent with sulfonamides alone and 16 per cent with other methods. It is apparent that recent advances in therapy have greatly improved the prognosis of abdominal actinomycosis.

Surgical Management of the Indurated Leg. — Lowenberg describes a surgical technic for the management of chronic indurated cellulitis of the lower extremity. It consists of the radical excision of all pathological tissue down to and including the fascia and the subsequent grafting of normal skin directly on well vascularized muscle. This procedure is based on the principle that the indurative process never extends beneath the fascia and that the blood supply of the underlying muscle is therefore always intact. An additional feature of the procedure is the correction of any coexisting venous stasis by ligation, stripping or resection of appropriate veins. The results of this operation have been good in the 110 cases treated during the past four years. Skin grafts have survived in toto in 75 per cent of the cases and pinch grafts have satisfactorily replaced any portion of the other grafts that did not take. It has been possible to discontinue elastic support and local medication in these patients. In only five cases in the series have there been recurrences. Since the institution of routine postoperative anticoagulant therapy, there have been no cases of pulmonary embolism. Prior to that time there were three cases, but all recovered with appropriate therapy.

Traumatic Rupture of Aorta.—Following traumatic rupture of the aorta, death usually occurs rapidly. In 64 of 90 reported cases, survival time was less than one hour. Bradford reports on a patient who lived for 81 days after such an injury. This 21 year old white man sustained fractures of the left sixth, seventh and eighth ribs in an automobile accident, following which he was unconscious for 24 hours. Two days later he was ambulatory. Five weeks later while straining he suddenly experienced severe pain in the chest and back and went into shock. Examination revealed dulness over the lower chest on the right side. A roentgenogram showed a circumscribed mass in this area and another in the posterior mediastinum displacing the esophagus anteriorly and the stomach laterally. A tentative diagnosis of traumatic rupture of the diaphragm with right hemothorax was made. At surgical exploration the diaphragm was found to be intact but the right pleural cavity was filled with old adherent clots. Removal of the clots was followed by massive hemorrhage from a tear in the aorta just proximal to the hiatal opening in the diaphragm. Packing controlled the hemorrhage for a week, but subsequent surgical attempts to repair the rupture were unsuccessful, and the patient died from blood loss. At autopsy the wall of the aorta showed no atherosclerosis, degeneration or other abnormality to account for the rupture, which was apparently traumatic.

Virginia Medical Monthly, Richmond

77:625-682 (Dec.) 1950

Mutual Support for Survival: Medical Plans for Civil Defense and Disaster Relief. W. L. Wilson.—p. 627.
Pernicious Anemia: Diagnosis and Treatment. B. S. Leavell, D. Shotton and C. Crockett Jr.—p. 635.
Diagnosis and Treatment of Trichomonas Vaginalis. R. T. Ferguson and G. S. Edgerton.—p. 643.
Hyperparathyroidism. J. B. S. Perrow.—p. 646.
Radioactive Iodine Studies Following Hemithyroidectomy for Carcinoma of Thyroid: Possible Aid in Diagnosis of Early Metastases—Case Report. K. R. Crispell.—p. 652.

Wisconsin Medical Journal, Madison

49:973-1088 (Nov.) 1950

Nontuberculous Diseases of Chest. L. L. Allen.—p. 995.
*"Base Coat" Nail Disease: Report of Case. I. I. Cowan.—p. 1003.
Carcinoma in Aberrant Breast Tissue. V. S. Falk Jr.—p. 1007.
Incidence of Management of Eczema in First Year of Life. A. B. Schwartz.—p. 1011.
Carcinoma of Jejunum: Report of Case. W. T. Casper and V. L. Baker. —p. 1014.
Immunization Survey in Rural Dane County. A. R. Zintek and P. D. Nelson.—p. 1017.
Use of Physostigmine and Foreign Protein Therapy in Arthritis and Related Conditions. A. H. Stahmer.—p. 1020.

"Base Coat" Nail Disease.—According to Cowan, "base coat" nail disease was first observed after the introduction of a liquid substance known as a base coat, or undercoat, which contained a solution of synthetic rubber and phenol-formaldehyde type of resin in methyl ethyl ketone. The solution is applied to the nails to preserve and protect the lacquer containing the pigments. The disease usually involves all the nails. Discoloration varies from yellow through a reddish blue to brown and almost black. There is a varying degree of separation of the nail from its bed. Subungual hyperkeratosis is characteristic. In the late stages, there is leukonychia (whitening of the nail) and also thinning of the nail in the distal third. Positive reactions to patch tests with the base coat solution further corroborates the diagnosis. The differential diagnosis of "base coat" nail disease is facilitated when it is remembered that infections of the nail with various types of fungi rarely involve all the fingers. Scrapings from the nail and the nail bed in fungus infections will give positive results on microscopic study of the smears and cultures. The condition is believed to be an allergic reaction to a substance in the base coat preparation. Elimination of the offending agent will usually be followed by recovery within three to six months.

FOREIGN

British Journal of Addiction, Shrewsbury

47:1-62 (Jan.) 1950

Some Aspects of Problem of Alcoholism in Switzerland. H. Revilliod. —p. 6.
Pharmacology of Antabuse (Tetraethylthiuramdisulphide). E. Jacobsen. —p. 26.
Significance of Low Alcohol Limen. O. Martensen-Larsen.—p. 43.

Indian Medical Gazette, Calcutta

85:385-434 (Sept.) 1950. **Partial Index**

Urinary Excretion of Antimony After Administration of Methyl Glucamine Antimoniate: Preliminary Observations. R. N. Chakravarti and P. C. Sen Gupta.—p. 388.
Muscular Anomalies. B. Singh and H. Khanna.—p. 391.
Studies on Plasma Protein: II. Amoebic Dysentery and Liver Disease. H. Chakravarti.—p. 394.
*Chloromycetin in Treatment of Cholera. R. N. Chaudhuri, S. Ghosal and M. N. Rai Chaudhuri.—p. 398.
Rapid Method of Iron Haematoxylin Stain for Protozoa in Tissue Sections and Smears. P. C. Sen Gupta, K. C. Basu Mallick and B. Bhattacharya.—p. 400.

Chloramphenicol in Cholera.—Chaudhuri studied 20 patients with cholera who had been ill for an average period of nine hours and who had severe dehydration, low blood pressure and feeble pulse. Ten of these patients were given chloramphenicol (total dose 12.0 Gm. in three days); 10 were not given it. Both groups received saline infusions to combat dehydration. The vibrios completely disappeared within 24 hours after the start of chloramphenicol treatment, but no difference in the course of the disease or results of the treatment was noticed between the two groups. However, no drug is likely to influence the disease when severe dehydration is present with all its complications. The author feels that, at this stage, administration of parenteral fluid is the only procedure that can avert the downward course, and this will always be the mainstay in the treatment of cholera. Chloramphenicol, by its quick action on the vibrios, might be of much value as a prophylactic against the spread of cholera.

Lancet, London

2:549-600 (Nov. 18) 1950

Suppurative Pneumonia. H. Nicholson.—p. 549.
*Rheumatoid Arthritis: Partial Rehabilitation by Interval Therapy with A.C.T.H. and Cortisone. R. E. Stone, T. D. Spies and W. Niedermeier. —p. 555.
Incidence of Toxoplasma Infection in North-West England: Transmission of Antibody from Mother to Foetus. A. Macdonald.—p. 560.
*Congenital Toxoplasmosis: Report of Two Cases in Twins. H. G. Farquhar.—p. 562.
Toxoplasmosis Complicated by Chickenpox and Smallpox: Report of Case. I. D. Ridey and G. C. Arneil.—p. 564.
Simplified Procedure for Determining Renal Clearance of Inulin and Diodone. O. Olbrich, M. H. Ferguson, J. S. Robson and C. P. Stewart. —p. 565.
Actions and Clinical Assessment of Drugs Which Produce Neuromuscular Block. W. D. M. Paton and E. J. Zaimis.—p. 568.
Colorimetric Estimation of *p*-Acetamidobenzaldehyde Thiosemicarbazone in Blood. D. G. Moss.—p. 570.

Rheumatoid Arthritis.—Stone and his associates attempted to rehabilitate a group of patients in whom rheumatoid arthritis was active and caused great disability. They gave these patients a series of injections of pituitary adrenocorticotropic hormone then injections of cortisone, the rationale being that one of these hormones overstimulates the adrenal cortices and the other tends "to put them to sleep." When the patients had acute symptoms and administration of neither pituitary adrenocorticotropic hormone nor cortisone was available, they were given injections of pregnenolone acetate, desoxycorticosterone acetate and ascorbic acid, isotonic sodium chloride solution or acetylsalicylic acid. In no case did pregnenolone acetate, desoxycorticosterone acetate and ascorbic acid, isotonic sodium chloride solution, or acetylsalicylic acid give relief, whereas both pituitary adrenocorticotropic hormone and cortisone were definitely beneficial. Though the patients are still under study, their disability has decreased sufficiently for them to work. Seven patients with rheumatoid arthritis were treated at intervals for 12 months with pituitary adrencorticotropic hormone and synthetic cortisone acetate. After the injections of cortisone or pituitary adrenocorticotropic hormone were discontinued, the symptoms gradually returned. The longest period of relief following a series of injections was four and a half months. After each period of either cortisone or pituitary adrenocorticotropic therapy the relief of symptoms was as great as that following the initial period, suggesting that the effectiveness of these hormones does not diminish in a year.

Congenital Toxoplasmosis.—In a pair of binovular twins, the girl had typical toxoplasmosis, with cerebral calcification, hydrocephalus, chorioretinitis, and toxoplasma antibodies in the serum. Her twin brother had similar antibodies but no clinical signs of the disease except mild ocular abnormalities. Since the mother's titer of antibodies was lower than his and he was 8 months old, he was probably infected with toxoplasmosis and had not acquired his antibodies merely by transmission from his mother. It is not certain that the ophthalmologic symptoms were due to the toxoplasma organism, but their perimacular distribution might be considered suggestive. If the boy was infected, it is necessary to assume either that fewer parasites entered his blood than that of his twin or that his resistance to the disease was greater. A remoter possibility is that he was infected by his mother's milk in the first week of life (after this time breast feeding was abandoned). Both parents were healthy. The mother had come into fairly regular contact with two dogs and two cats during her pregnancy, and during the first six months of her pregnancy she had worked in a factory where there were many mice.

2:601-660 (Nov. 25) 1950

Study of Delinquency. D. H. Stott.—p. 601.
Suppurative Pneumonia. H. Nicholson.—p. 605.
*Q Fever in Great Britain: Epidemiology of Outbreak. B. P. Marmion and M. G. P. Stoker.—p. 611.
Q Fever in Great Britain: Causative Agent. M. G. P. Stoker.—p. 616.
Immediate Retropubic Prostatectomy in Acute Retention. F. R. Hurford. —p. 620.
Resistance to Chloramphenicol Developing During Treatment of Typhoid Fever. J. Colquhoun and R. S. Weetch.—p. 621.
Flame Photometry. A. G. Spencer.—p. 623.

Q Fever in Great Britain.—Marmion and Stoker describe the epidemiological investigation of an outbreak of Q fever at a London hospital that comprised two apparently unconnected episodes, the first consisting of four cases in July 1949 and the second of two cases in September 1949. In the first episode, a nurse, two pathologists and a mortuary attendant were apparently infected during the terminal illness and at the necropsy in an unrecognized case of Q fever. The staff of the hospital was closely watched for any secondary cases resulting from infection by the first four patients. Two months later another member of the staff and his wife became ill with a condition clinically suggesting Q fever. A rising complement fixation titer to Rickettsia burnetii in both patients soon confirmed the clinical diagnosis. The incubation period of Q fever is usually about 19 days, with a range of 14 to 26 days. At the probable date of infection the hospital staff member in the second group had been with his wife on holiday in Devon. Since they had not taken any contaminated articles from the hospital on holiday with them, they must had been infected from a different source. Further inquiry revealed that they had had several meals, including liquid cream, at a Devon farm. Fourteen of the 40 cattle on the farm were bled, and two of them were found to have antibodies for R. burnetii in low dilution. It is reasonable to suppose that the source of infection was on the farm. The patient who died in the first hospital episode of Q fever came from Kent and may have been infected there by the consumption of raw milk, which was shown to contain R. burnetii. Other investigations, revealing more cases of Q fever and demonstrating antibodies in farm workers and cattle, have shown that parts of Kent and Devon are areas where Q fever is endemic.

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

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Medical Journal of Australia, Sydney

2:601-636 (Oct. 21) 1950

The Law of Life. E. S. J. King.—p. 601.
Hypokalaemia Complicating Sodium Para-Amino-Salicylate Therapy for Pulmonary Tuberculosis. K. H. Heard, A. H. Campbell and J. J. Hurley.—p. 606.
Surgical Pathology of Ménière's Symptom Complex. G. Swinburne. —p. 612.
Treatment of Syphilis with Penicillin at the Government Venereal Diseases Clinic, Sydney: Preliminary Report. J. H. Abbott.—p. 618.
*Barbiturate Idiosyncrasy Following Lumbar Puncture: Case Report. V. S. Howarth.—p. 622.

Lumbar Puncture for Sensitivity to Barbiturates.—The man whose case is reported by Howarth was given 0.5 Gm. of thiopental sodium intravenously to induce anesthesia. While being anesthetized, the patient became cyanosed. He had an epileptiform fit while on the operating table, and at the conclusion of the operative procedure became cyanosed and ceased to breathe. Artificial respiration was induced by means of the anesthetic apparatus, the patient's color remaining good and the pulse of regular rate and normal volume. Picrotoxin was administered without effect. After six hours, when the anesthetic mask was removed, the patient again became cyanosed and exhibited no respiratory movements. He was placed in the "iron lung" and shortly afterward had another epileptiform convulsion. He was removed from the Drinker apparatus, and lumbar puncture was performed. The cerebrospinal fluid pressure was found to be elevated to about 300 millimeters. When this was reduced to normal, the response of the patient was dramatic. Normal respiratory rhythm ensued immediately, and the patient rapidly became conscious. On the third postoperative day pulmonary collapse developed. With penicillin therapy further convalescence was uneventful, and the clinical signs at the base of the left lung gradually resolved. This case shows not only the value of lumbar puncture in prolonged unconsciousness and respiratory depression resulting from undue sensitivity to thiopental sodium but also the relation of severe respiratory depression in the presence of bronchitis to postoperative pulmonary collapse.

Proceedings of Royal Society of Medicine, London

37:741-774 (Oct.) 1950. **Partial Index**

Some Applications of Newer Antibiotics: Scope of New Antibiotics. R. Cruickshank.—p. 759.
Chloromycetin in Infantile Gastro-Enteritis. J. M. Smellie.—p. 766.
Present Status of Cortisone and ACTH in General Medicine. P. S. Hench.—p. 769.

South African Medical Journal, Cape Town

24:865-880 (Oct. 14) 1950. **Partial Index**

Ten-Year Survey of Biliary Surgery at the Johannesburg General Hospital. J. Lannon and J. Katz.—p. 865.
*Primary Carcinoma of Liver in East African Natives. Is It Caused by an Infective Agent? W. O. Fischer.—p. 869.
Case of Senear-Usher Syndrome. J. Marshall.—p. 871.

Infective Agent and Carcinoma of Liver.—Fischer summarizes his research of the past 20 years in his capacity as medical officer to the Rand Mines in South Africa. He found that in the hypophyses of 17 native mine workers who died of primary carcinoma of the liver intracytoplasmic inclusion bodies were present. These bodies could not be demonstrated in natives of the same tribes who died of other disease. In guinea pigs and rabbits inoculated with an emulsion of infected human hypophysis, these inclusion bodies appeared in the cytoplasma as well as in the nuclei of the host cells in various organs. The nature of these bodies is not fully understood. From these preliminary observations the question arises whether these bodies represent inclusion bodies of a virus or a type of Rickettsia.

Tubercle, London

31:249-270 (Nov.) 1950

Some Aspects of Use of Streptomycin and PAS. T. A. W. Edwards. —p. 250.
Certain Social Habits as Modes of Acquiring Tuberculous Infection. B. Benjamin and F. A. Nash.—p. 256.
Tuberculosis, Marriage and Work. B. Benjamin and F. A. Nash.—p. 259.
Diagnostic BCG Test in Old Individuals. J. Jonsen and H. J. Ustvedt. —p. 261.

Acta Haematologica, Basel

4:257-320 (Nov.) 1950. **Partial Index**

*Eosinophilia in Diabetes Mellitus. R. G. Paley.—p. 257.
Four Cases of Plasma Cell Leukemia. M. Scherrer.—p. 291.
The Nuclear Picture in Cases of Decompensated Pernicious Anemia. W. Burkl and F. Leonhartsberger.—p. 301.

Eosinophilia in Diabetes Mellitus.—Paley mentions previous reports on the occurrence of eosinophilia in diabetes mellitus and evaluates methods of counting blood eosinophils, giving particular attention to Dunger's method, which uses the hemocytometer. His own studies were made with a modification of Dunger's method. He observed no abnormal eosinophil counts in diabetic patients who were treated with diet alone, nor in a group of patients receiving insulin but not suffering from local skin reactions. Patients receiving insulin and exhibiting local sensitivity had a slightly higher mean eosinophil count, but this increase was not significant statistically. The possibility that severe local skin reaction may cause eosinophilia was investigated, and it was found that severity of local reaction did not affect the degree of eosinophilia. The author points out that these observations do not support either Joslin's or Lawrence and Buckley's contention that eosinophilia is commonly present in insulin-treated diabetic patients. However, the criteria of eosinophilia were more rigid in the present study, and the method of estimation was more accurate.

Beiträge zur klinischen Chirurgie, Berlin

180:479-632 (No. 4) 1950. **Partial Index**

Should Perforated Peptic Ulcers Be Sutured or Resected? W. Nell. —p. 479.
Giant Cell Tumors of the Spine. P. Blümel and R. Janzen.—p. 497.
Investigations on Coagulation Time when Blood of the Portal Vein and of Peripheral Vessels is Mixed. F.-W. E. Caumanns.—p. 507.
Late Results After Surgical Treatment of Chronic Subdural Hematoma. G. Okonek.—p. 521.
*Problem of Etiology of Acute Appendicitis. W. Danger.—p. 533.
Perforation of Bile Passages into Retroperitoneal Space. R.-A. Von Oeynhausen.—p. 539.
Anastomoses in the Deep Bile Passages: Results of 80 Operations. G. Titze.—p. 544.
Operations for Cancer of Stomach Over a Period of 16 Years: Increase in Percentage of Resections. Mortality Rate. K. Regensburger.—p. 557.
Closure of Parotid Fistulas: Method of Operation. E. Hauberrisser. —p. 565.

Etiology of Acute Appendicitis.—None of the theories suggested about the etiology of appendicitis have found general acceptance, and Danger is aware that his observations also will not give a complete explanation, but they may throw some light on this problem. During the war years 1941 to 1945 and after the war, few cases of appendicitis were observed in German soldiers and prisoners of war in Russia. These men were of an age in which appendicitis ordinarily has a rather high incidence. Intestinal infections apparently do not favor the development of acute appendicitis; the opposite seems to be the case. Great physical exertion and a diet with a high cellulose content seem to inhibit rather than promote appendicitis, probably because they stimulate peristalsis. In doing this they prevent stasis in the intestinal lumen and thereby counteract an increase in amount and virulence of the intestinal flora. The great mental stress connected with the war, which is reflected in the sympathetic nervous system, did not seem to increase the incidence of appendicitis, contrary to Ricker's hypothesis, which ascribed great etiologic importance to a crisis in the neurosympathetic system, to climatic and traumatic factors. It is pointed out that during World War I also the incidence of appendicitis decreased.

Cuore e Circolazione, Rome

34:193-252 (Aug.) 1950. **Partial Index**

*Diagnostic and Electrocardiographic Interpretation of Disorders of Interventricular Conduction. Roentgenologic Study of 175 Cases. D. De Carolis.—p. 193.

Disorders of Interventricular Conduction.—De Carolis divides disorders of interventricular conduction into (1) delayed interventricular conduction and (2) heart block, as shown by the changes of the electrocardiogram taken in precordial leads. Block is classified as either right or left, complete or incomplete and with or without ventricular hypertrophy or myocardial

infarct. Using this classification the author studied the electrocardiograms of 3,000 persons of either sex, with or without heart disorders. Disorders of interventricular conduction were encountered in 175 cases. The electrocardiograms of patients with right, incomplete interventricular block showed right-sided hypertrophy in 17 per cent of the cases and left-sided hypertrophy in 5 per cent. In 80 per cent of the cases of left, incomplete interventricular block, there was an associated hypertrophy of the left half of the heart. Either right or left, complete interventricular block was associated in all cases with pronounced ventricular hypertrophy, either homolateral or bilateral. The predominant ventricle was that in which the origin of the block was suspected. The electrocardiographic tracings of all the aforementioned types of disorders of interventricular conduction are shown in the article, and the precise characters of the electrocardiograms are described in detail.

Deutsche medizinische Wochenschrift, Stuttgart

75:1495-1534 (Nov. 10) 1950. **Partial Index**

Changes in Eyegrounds in Arterial Hypertension and in Renal Diseases. R. Thiel.—p. 1495.
Two Village Epidemics of Q Fever in Baden. C. Oehme.—p. 1500.
Differential Diagnosis and Therapy of Headache. H. Sarre.—p. 1507.
Vitamin Therapy in Diseases of Nervous System: Critical Evaluation. W. Stepp.—p. 1513.
Effects of Dihydroalkaloids of Ergot in Hypertension. K. Kaiser and P. Martini.—p. 1516.
*Comparison of Therapeutic Results with TB-1 698 (Thiosemicarbazone or Amithiozone), Paraaminosalicylic Acid and Streptomycin in Pulmonary Tuberculosis. J. Hein.—p. 1527.

Comparison of Chemotherapeutics and Streptomycin in Pulmonary Tuberculosis.—Hein used amithiozone (4-acetylaminobenzaldehyde thiosemicarbazone), paraaminosalicylic acid and streptomycin in the treatment of pulmonary tuberculosis. Evaluation of groups of treated patients and of control groups convinced him that amithiozone exerts no direct influence on the pulmonary process. He admits that ulcerative tuberculous lesions of the larynx as well as intestinal tuberculosis show symptomatic improvement during treatment with amithiozone and that this is occasionally accompanied by some improvement in the pulmonary process. Temperature decreases, bowel movements become less frequent and the appetite increases. Streptomycin effects considerable initial improvement even in serious cases that have proved refractory to various treatments, including collapse therapy. Treatment with paraaminosalicylic acid does not produce the same favorable results, but the author concluded that this medicament prevents exacerbations at least and that it should be used chiefly for maintenance of the initial improvement obtained with streptomycin. Paraaminosalicylic acid seems to be more effective in the productive than in the exudative-cavernous forms of tuberculosis. In this latter form streptomycin seems to act more promptly and effectively. The combined administration of streptomycin and paraaminosalicylic acid seems to be justified. Hein's conclusions are in disagreement with the views of the German Tuberculosis Society.

Journal de Médecine de Lyon

31:935-990 (Nov. 20) 1950. **Partial Index**

Intracardiac Functional Systolic Murmurs Due to Cardiac Hyperirritability. C. Lian.—p. 935.
Segmentary Studies of Venous Pressure by Cardiac Catheterization in Man. B. Moia.—p. 939.
Critical Study of Effect of Oxygen Therapy in Cardiac and Coronary Insufficiency. M.-R. Malinow.—p. 940.
Studies on Immediate and Late Treatment of Coronary Thrombosis with Dicumarol or Its Derivatives. R. Froment, A. Gonin, P. Cahen and others.—p. 953.
*Forty-Two Cases of Bacterial Endocarditis Treated with Antibiotics: Bacteriologic, Anatomicoclinical and Therapeutic Remarks. R. Froment, P. Monnet, A. Gonin and others.—p. 963.

Bacterial Endocarditis Treated with Antibiotics.—Froment and co-workers report on 42 cases of bacterial endocarditis. Systematic bacteriologic studies were carried out in 37 patients. The pathogenic agent was isolated in 22 instances, while blood cultures were negative in 15 instances. Streptococci or enterococci were demonstrated in 21 of the 22 positive cases. Satisfactory results were obtained with antibiotic therapy in 26 patients; results were doubtful in three patients, and treatment failed in 13 patients. From the bacteriologic point of view it is indispensable to add penicillinase to the blood cultures obtained from patients who have recently received penicillin. In general, there was good agreement between results of bacterial sensitivity tests in vitro and the clinical results obtained with the antibiotics tested. Following recovery from the febrile stage of the disease, there was a high incidence of secondary cardiac failure. Necropsy demonstrated mutilating scars on the valves, which produced much hemodynamic disturbance. Significant fibrotic myocardial lesions were also observed. Cardiac decompensation and renal insufficiency as a rule suggested an unfavorable prognosis, but recovery still occurred in some cases. The value of penicillin therapy has been well established. The initial treatment with penicillin should be continued for three weeks, discontinued for 10 to 15 days and reinstituted for about 10 days. Repeated courses during the first year proved advantageous. Systematic combined treatment with penicillin and streptomycin seems advisable in all cases of negative blood culture. Chloramphenicol (chloromycetin®) was tried, but the number of cases was too small for any conclusions to be drawn. Hospitalization of patients suspected of bacterial endocarditis is imperative at least until the diagnosis has been established and sensitivity of the bacterial strains to penicillin and streptomycin, respectively, has been determined.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

94:3141-3208 (Nov. 4) 1950. **Partial Index**

*Treatment of Rheumatoid Arthritis with Desoxycorticosterone Acetate and Vitamin C. J. C. J. Burkens.—p. 3153.
Liver Diseases Without Icterus. J. C. M. Verschure.—p. 3158.
*Caries of Ribs, a Misleading Term. P. Nyst.—p. 3166.
Prolonged Retention of Dental Prosthesis in Trachea. H. B. G. Breijer and P. de Haan.—p. 3172.

Desoxycorticosterone Acetate and Vitamin C in Rheumatoid Arthritis.—The administration of desoxycorticosterone acetate and ascorbic acid (vitamin C) failed to produce significant changes in the joints and in the blood of patients with rheumatoid arthritis.

Rib Caries—a Misleading Concept.—Nyst presents clinical data on 12 patients with cold abscesses of the thoracic wall in whom caries of a rib or of the sternum was diagnosed. In six of these 12 cases treatment included resection of a rib and extensive removal of tuberculous tissue. Examination of the removed rib did not disclose tuberculous changes in any of the cases. Although development of a tuberculous focus in a rib via the hematogenous route cannot be entirely excluded, the author feels that the diagnosis of rib caries is doubtful when neither roentgenoscopy nor the removed ribs disclose tuberculous changes and when the process occurs on the side of the chest that shows old tuberculous lesions in lungs, pleura and lymph nodes. This suggests lymphatic spread with possible secondary changes in a rib. The author feels that cold abscess of the thoracic wall is the more correct term. During surgical treatment, attempts should be made to find the focus in one of the lymph nodes of the thoracic wall. The term "rib caries" should be avoided, as long as it is not confirmed by roentgenoscopy and by microscopic and macroscopic examination of the removed rib.

Nordisk Medicin, Stockholm

44:1663-1702 (Oct. 20) 1950. **Partial Index**

Activation of Bedridden Patients. I. Alvik.—p. 1663.
*Clinical Validity of Thematic Apperception Test. B. Leunbach and A. Flachs.—p. 1665.
Medical Investigations in North Greenland 1948-1949. M. C. Ehrström.—p. 1668.
Psychosomatic Medicine in Gastroenterology. F. Hirschberg.—p. 1673.
Psychosomatic Investigations in Patients with Ulcer and Dyspepsia. V. Lindén.—p. 1677.
Senile Psychoses and Pellagra. E. Kierboe and N. Vinther-Paulsen.—p. 1681.
*Schizophrenia as Adaptation Syndrome. Pathology of Cleavage. Significance of Malnutrition. O. Lingjaerde.—p. 1683.

Clinical Validity of TAT.—Leunbach and Flachs applied Murray's thematic apperception test (TAT) in 22 cases characterized by neurotic conditions and psychopathy. They conclude that the test is a useful adjunct in the psychiatric clinic. It is time saving, may permit deeper analysis and therapy and can disclose conflicts and problems of which the patient is unconscious

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or which he is reluctant to reveal. In some instances the test had a certain therapeutic effect, a kind of problem solution occurring during the test. In 21 cases there was good correlation with the clinical observations. In 11 the test provided valuable confirmation, which allowed definitive diagnosis with greater certainty, and in four it provided valuable new findings.

Schizophrenia as Adaptation Syndrome.—Lingjaerde says that under certain conditions and in predisposed persons schizophrenic symptoms may appear after long-continued weakening of the ability to concentrate and of the dynamic power of the ego. Impairment of the ego may depend partly on central nervous system effects and partly on defects in nutrition or metabolism. He stresses that long-continued inanition and the resulting symptoms may contribute to a weakening of the ego. If the ego has received a permanent injury, the constellation characteristic of schizophrenia appears. Attention is called to the similarity between the clinical picture in anorexia nervosa and a certain central group of schizophrenias. Some schizophrenics seem to have greatly increased need of carbohydrates in the active phase. Therapy in the early stages should primarily be of a hygienic kind especially directed to the development of psychosomatic adaptation ability (mental and physical harmony). In the acute phase of manifest schizophrenia, therapy should be directed toward combating everything tending to weaken the ego and the adapation energy. Shock treatment gives the best results in the introductory phase before mental cleavage is complete. The effect consists first in a mobilization of the adaptative energy by way of the hypothalamus and adrenal cortex. Prefrontal lobotomy and other operative methods are also most successfully applied in the acute phase, while the patient is still fighting his disease.

Obst. y Ginecol. Lat.-Americanas, Buenos Aires

8:393-460 (Sept.) 1950. **Partial Index**

*Electroencephalography and Pregnancy. J. Roubillard G. and C. Villavicencio.—p. 422.

Electroencephalography in Pregnancy.—Electroencephalographic studies were carried out on 23 patients with eclampsia (18 primiparas and five multiparas) and 26 patients with preeclampsia (10 primiparas and 16 multiparas). Electroencephalograms were taken after all drugs that might alter them had been discontinued and after clinical symptoms had been brought completely under control. In eclamptic patients they were taken four to 20 days after the last convulsion and in preeclamptics one to 10 days before delivery. Several weeks later both groups were checked again. Abnormal electroencephalograms were encountered in 20 of the 23 patients with eclampsia and in six of the 26 patients with preeclampsia. The abnormality in all cases was of the cerebral dysrhythmia type. It persisted unchanged several weeks and months later. The authors believe that toxemia of pregnancy precipitates convulsions in predisposed women and that such a predisposition can be demonstrated by means of the aforementioned changes in the electroencephalogram. Therefore, electroencephalograms should be taken in pregnant women with a history of convulsions in the family and also in cases of preeclampsia. The presence of cerebral dysrhythmia in a preeclamptic woman not responding to treatment is an indication for the prompt administration of anticonvulsive drugs or the induction of labor. Delay in treatment may lead to the development of eclampsia.

Praxis, Bern

39:963-982 (Nov. 9) 1950. **Partial Index**

Dechloridated Salts and Salts Without Sodium: Their Reciprocal Action in Treatment of Dehydration. J. Fabre.—p. 963.
Hemorrhagic Diathesis. A. Baserga and P. De Nicola.—p. 967.
*Risk of Infection Associated with Prolonged Treatment with Adrenocorticotropic Hormone (ACTH) and Cortisone. H. Dubois-Ferrière.—p. 974.

Infection and Prolonged ACTH Therapy.—Dubois-Ferrière treated a man aged 33 with advanced Hodgkin's disease with cortisone and pituitary adrenocorticotropic hormone (ACTH). Remission of symptoms was obtained by prolonged treatment with these drugs. The patient continued to receive an average daily dose of 100 mg. of cortisone for four months. The enlargement of the lymph nodes disappeared completely; the size of the spleen was restored to normal; progress of bone and pleuropulmonary lesions was arrested; pronounced edema of the left arm disappeared; the temperature was restored to normal, and the general condition was much improved. Discomfort and fever recurred when cortisone was discontinued. The erythrocyte sedimentation rate remained increased even during the period of stabilization. It appeared that cortisone only masked the symptoms of the lymphogranuloma, which recurred when the doses of cortisone were reduced. All the symptoms had disappeared after combined treatment with cortisone, irradiation and chemotherapy. The daily dose of cortisone was then reduced from 100 to 75 mg. Three days later there was a sudden rise of temperature, associated with prostration, dyspnea and tachycardia. Septicemia was revealed by a positive culture of Staphylococcus aureus. The symptoms of infection disappeared rapidly after treatment with penicillin and aureomycin. A new attempt was made to reduce the daily dose of cortisone to 50 mg., but after two days septicemia recurred. An abscess containing Staph. aureus developed in the gluteal muscle in the absence of any inflammatory reaction. It was detected by chance when the patient was given an intramuscular injection. Rapid defervescence was obtained with antibiotics given for 10 days. The daily dose of cortisone was doubled and tripled for the first three days of the infectious episode, and maintenance therapy was then reinstituted with a daily dose of 100 mg. of cortisone. A third rise of temperature occurred, and large doses of penicillin, aureomycin and terramycin were given, while cortisone was discontinued. The granuloma did not recur, and there was a progressive drop in temperature. The patient is now receiving no more than 50 mg. of cortisone three times per week, 10 hours before blood transfusions are given, the chill associated with the transfusions being thus prevented. Diagnosis of a general infection in the course of treatment with pituitary adrenocorticotropic hormone and cortisone is difficult, because hormone therapy masks the common symptoms of septicemia, which may run its course for a long time without causing a rise of temperature. The presence of the bacterial colonies will become apparent when treatment with pituitary adrenocorticotropic hormone and cortisone is discontinued. The adrenocortical atrophy resulting from prolonged administration of cortisone makes the organism less resistant to infections.

Presse Médicale, Paris

58:1337-1352 (Nov. 29) 1950. **Partial Index**

*Problems Posed by Therapeutic Use of Cortisone and Pituitary Adrenocorticotropic Hormone (ACTH). F. Coste, F. Delbarre, F. Laurent and F. Lacronique.—p. 1337.
"Hyperfolliculinia" and Hyperthyroidosis: Physiopathological, Clinical and Therapeutic Study. J. Olmer, G. Erlande and E. Abignoli.—p. 1342.
*Treatment of Migraine and Intractable Headache with Ergotamine Tartrate and Procaine Hydrochloride in Aerosol Form. J. Tabart.—p. 1351.

Therapeutic Problems Posed by Cortisone and ACTH.—From a series of over 100 patients with various diseases treated with pituitary adrenocorticotropic hormone (ACTH) or cortisone, Coste and co-workers report considerable and sometimes spectacular improvement in acute rheumatic pancarditis resistant to salicylic acid and in acute attacks of asthma and gout. Chronic diseases, on the other hand, such as eczema, scleroderma, dermatomyositis, periarteritis nodosa and chronic rheumatism, usually recur after therapy. Further experience is necessary before a decision can be reached as to whether prolonged maintenance treatment may be advisable in spite of its expense, whether treatment with the usual drugs should be combined with modern hormone preparations or whether moderate doses of the hormones in intermittent courses should be combined with courses of insulin or chrysotherapy. In addition to the untoward reactions described by American authors, there are reports by French authors of tissue intolerance to cortisone in microcrystalline suspension in the form of induration and sterile abscesses complicated by extensive sloughing. Even more significant is the reduced response of the organism to infection, which might entail severe complications, although it is still too early for definite evaluation. Pituitary adrenocorticotropic hormone, being water soluble and rapidly diffused, is indicated in cases in which a rapid and strong effect is required, as in

serious carditis or severe attacks of asthma. It appears also to be somewhat more effective than cortisone in lipid nephrosis and in acute attacks of gout. In contrast to that, cortisone may be preferred for treatment of chronic conditions. But combined or alternative treatment of the same patient with both preparations may be suggested by atrophy of the adrenal cortex induced by cortisone on one hand and by the secondary loss of activity of the pituitary adrenocorticotropic hormone on the other hand. Cortisone may be preferred to pituitary adrenocorticotropic hormone in the presence of renal impermeability, retention of water and sodium chloride.

Ergotamine Tartrate and Procaine Hydrochloride Aerosols in Migraine and Refractory Headache.—Tabart treated 41 patients with ophthalmic migraine and 12 patients with cephalalgia of nasal origin with aerosols of procaine hydrochloride or ergotamine tartrate. These patients had not responded to usual modes of treatment. Lasting improvement with disappearance of pain for five to 18 months resulted from the aerosol treatment in 25 of the 41 patients with ophthalmic migraine. Results were doubtful in four patients, while 13 were therapeutic failures. The headaches of nasal origin disappeared for periods up to eight months in nine of 12 patients, while three, and particularly those with headache of facial neuralgia type, were therapeutic failures. Five to nine applications of procaine hydrochloride in doses varying from 0.5 to 1 Gm. proved effective, particularly in migraine of permanent and diffuse type. Ten to 15 applications of ergotamine tartrate in doses varying from 0.5 to 1 mg. were effective, particularly in isolated attacks of paroxysmal migraine or in those of several days' duration. Headache of nasal origin seemed to respond best to treatment with procaine hydrochloride. The authors believe that procaine hydrochloride exerts its effect on the sphenopalatine ganglion and that the sedative effect of the drug continues after it can no longer be detected in the blood. Ergotamine tartrate is to be considered as a selective paralyzer of the sympathetic nervous system; it exerts an adrenolytic effect at the level of the sympathetic nerve endings. Its effect on the migraine is almost immediate when the drug is administered in aerosol form and is much more pronounced than when given by oral, rectal or parenteral route. Procaine hydrochloride or ergotamine tartrate aerosols act more rapidly and exert a more lasting effect than any other sedative methods so far used in migraine or cephalalgia. Therapeutic failures were observed only in long-standing and severe cases of migraine.

Revista Chilena de Pediatria, Santiago

21:337-374 (Aug.) 1950. **Partial Index**

*Hydrocephalus in Tuberculous Meningitis: Treatment with Streptomycin. J. E. Howard, M. Latorre, A. Doberti and R. Merello.—p. 377.
*Acute Miliary Tuberculosis in Infant 7 Weeks Old: Cure by Streptomycin and Paraaminosalicylic Acid. O. Correa B. and J. Allende A.—p. 364.

Hydrocephalus in Tuberculous Meningitis.—Howard and collaborators observed a group of infants and children with tuberculous meningitis treated with streptomycin. Hydrocephalus developed in more than 50 per cent of the patients. The authors report on 25 selected cases of hydrocephalus in infants and children. The streptomycin was given both by the intrathecal and the intramuscular routes. The intrathecal dose of streptomycin varied with the age of the patient between 25 mg. and 100 mg. This dose was given daily for one week, every other day for the following two weeks and every three days for the following month, after which 25 mg. were given at intervals of three days until the cerebrospinal fluid became normal. Intramuscular injection of streptomycin was given daily in doses of 350 to 600 mg., in two equal doses for 120 to 180 days. Hydrocephalus may develop either during the first month of the disease, or after the second month. The type of hydrocephalus, caused either by excessive secretion of the cerebrospinal fluid or by lack of absorption of the fluid because of the formation of exudates at the cisterna basalis, is ascertained by pneumonencephalography. The latter type is the more frequently diagnosed and has a poorer prognosis. Determination of the type of hydrocephalus is important because hydrocephalus due to hypersecretion of the cerebrospinal fluid is controllable by an early operation.

Acute Miliary Tuberculosis.—The patient was a 7 week old infant, with a clinical, bacteriologic and roentgenologic diagnosis of acute miliary tuberculosis. She had continuous high fever, cyanosis, dyspnea, pyuria, acute suppurative otitis and facial paralysis. Chest roentgenograms showed diffuse lesions of a bilateral acute miliary tuberculosis. The treatment consisted of intramuscular injections of 60 mg. of streptomycin, up to a total daily dose of 500 mg. at the beginning and 400 mg. thereafter, and of 2 Gm. of paraaminosalicylic acid per day. The treatment was given without interruption for six and one-half months, during which vitamins A, C, D and dried (brewer's) yeast were also given. The subjective symptoms improved early, whereas the lesions in the roentgenograms of the chest did not improve until six months later. These continued to improve until complete recovery of the patient at the age of 2 years and 3 months.

Revista Médica de Chile, Santiago

78:627-688 (Oct.) 1950. **Partial Index**

*Subcutaneous Implantation of Protamine-Zinc-Insulin in Diabetes. L. Vargas, J. Lewin and A. Winter.—p. 627.

Diabetes Mellitus.—Vargas and collaborators implanted insulin pellets subcutaneously in 15 patients with grave forms of diabetes mellitus. The group included children, young adults who had had the disease from childhood and adults over 40 years old in whom the disease developed in adult life. Pellets containing equal parts of protamine zinc insulin and cholesterol or protamine zinc insulin alone were implanted, either in the subcutaneous tissue of the buttock or in the interscapular region. The authors found in previous experiments that the daily absorption of insulin from implanted pellets was 1 unit for every 100 units implanted, when a mixture of protamine zinc insulin and cholesterol was used, and half a unit for every 100 units implanted, when pure protamine zinc insulin was used. The dose of insulin to be implanted for total substitution of daily insulin requirement is 100 times the daily dose of insulin injected. The results of the authors in the 15 cases reported on are in agreement with the aforementioned statements. The insulin pellet implantation containing a total of 5,000 to 10,000 units constantly supplies from 2 to 4 units of insulin per hour, thus keeping the diabetes under control. The constant insulin effect lasted two to four months for implants of protamine insulin and cholesterol and twice as many months when protamine zinc insulin alone was used. The authors found that a reaction occurs in the subcutaneous tissues at the site of the implantation, with consequent formation of a pseudoendocrine gland. This gland is made up of reticuloendothelial cells and blood capillaries. The reticuloendothelial cells phagocytize protamine zinc insulin and deliver it into the blood. The continuous impregnation of the reticuloendothelial system with insulin and the slow absorption of insulin by the blood for a period of months result in an improvement of the endocrine system, mainly the anterior portion of the hypophysis, with consequent regulation of glycemia and glycosuria. The participation of the recticuloendothelial system explains the greater effectiveness of insulin when given by implantation than when given by injection.

Riforma Medica, Naples

64:1005-1022 (Sept. 16) 1950. **Partial Index**

*Bronchial Cancer in Patient with Pulmonary Tuberculosis with Cavitation Followed by Mediastinal Emphysema, Subcutaneous Emphysema and Lobar and Pulmonary Atelectasis of Right Lung. F. Volpe.—p. 1005.

Pulmonary Tuberculosis with Cavitation and Bronchial Cancer.—The subject of this report was a patient with tuberculous cavitation of the upper lobe of the right lung and cancer of the right bronchus. Suddenly, the patient presented a huge asymptomatic mediastinal and subcutaneous emphysema from rupture of the bronchus. It spontaneously disappeared within 20 days, when complete obstruction of the bronchus and atelectasis of the right lung occurred. Atelectasis was followed by great but transient improvement in the condition of the patient.

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Semaine des Hôpitaux de Paris

26:4491-4540 (Nov. 26) 1950. **Partial Index**

Treatment of Fractures of Calcaneus Associated with Deepening of Groove: Personal Technic. J. Gosset.—p. 4491.
Arthroplasty of Hip by Use of an Acrylic Resin Prosthesis for Replacement of Head and Neck of Femur: Personal Technic. J. Gosset.—p. 4494.
*Transplantation of Preserved Human Aortic Grafts: Case Report. C. Dubost, N. Oeconomos, M. Durand and C. Metianu.—p. 4497.

Transplantation of Preserved Human Aortic Graft.—Dubost and co-workers report on a woman aged 26 with stenosis of the aortic isthmus and much dilatation of the ascending aorta. The coarctation of the aorta was immediately below the origin of the subclavian artery. After the excision of the narrowed portion of the aorta, a preserved human aortic segment measuring 5 cm. in length was transplanted according to the technic of Gross and anastomosed to the aorta. The origin of the subclavian artery was in the upper segment of the anastomosis. A satisfactory result was shown by functional improvement, diminution of the arterial tension and improved femoral pulse. The patient felt well two months after the intervention. Angiography revealed no stenosis. Preserved human aortic grafts were used successfully in three other patients, two with typical tetralogy of Fallot and one with segmental arteritis. The results obtained in the authors' four patients and those obtained by Gross and his co-workers show that the problem of preserved human arterial grafts has been solved and that blood vessel banks are indispensable, particularly in cardiovascular surgery centers.

26:4541-4574 (Nov. 30) 1950. **Partial Index**

*New Ultramicroscopic virus (Coxsackie) Associated with That of Poliomyelitis. C. Levaditi.—p. 4541.
*Intestinal Irrigation in Treatment of Severe Uremia. E. E. Twiss.—p. 4544.
Remarks on 18 Cases of Infectious Mononucleosis. R. Crosnier, P. Jarniou, C. Pedoya and A. Costevec.—p. 4552.
Multiple Tuberculomas of Brain: Relation with Encephalitis and Tuberculous Meningitis. C. Gros and J. Mirouze.—p. 4556.

New Ultramicroscopic (Coxsackie) Virus.—Levaditi inoculated group A and group B strains of the coxsackie virus in suckling mice. The group A strains showed the same selective myotropic activity with regard to the striated muscles that had been observed by Dalldorf. Transcranial inoculation of group B strains resulted in diffuse encephalitis, monocytic perivasculitis, infiltration of the parenchyma by degenerated or eosinophilic polymorphonuclear leukocytes and neuronophagia. Formation of tissue cavities with destruction of nerve cells was observed at the level of the hippocampus. The process seemed to start by chromatolysis and complete disappearance of Nissl's bodies. Hypertrophy of neurons was followed by degeneration and disintegration with formation of confluent cavities. The nuclei of certain neurones showed changes resembling those due to herpes. Other neurons contained partly acidophilic inclusions in their cytoplasm and partly fine, slightly basophilic granulations whose accumulation in the vacuoles compressed the nuclei and rendered them eccentric. The contrast between the severity of the neuraxial lesions and the extreme mildness of the muscular changes caused by the group B strains was a peculiarity of these strains. The filtrable coxsackie viruses harbored in the feces of patients with typical or abortive poliomyelitis differ completely from the causative agent of acute anterior poliomyelitis (Heine-Medin disease). The association of group A and group B coxsackie viruses with the virus of poliomyelitis is accidental. No genetic relation between the two pathogenic agents has been demonstrated. The coxsackie virus apparently may be responsible for epidemic pleurodynia (Bornholm disease).

Intestinal Irrigation in Treatment of Severe Uremia.—Twiss treated several patients with severe uremia by means of intestinal irrigation. In one of the technics employed, a jejunal tube was used consisting of two parts, the proximal made of stiff plastic material and the distal made of flexible rubber. A stilet made it possible to pass the tube under fluoroscopic control through the pyloric sphincter into the jejunum. The stilet was then pulled back gradually. The proximal, stiff part of the tube prevented distention and also regurgitation of the tube. For free drainage a rectal tube was inserted. This was simply a flexible rubber catheter of the dePezzer type. The other technic consisted of isolation and exteriorization of a 6 foot loop of the small intestine and reestablishment of intestinal continuity by enteroanastomosis. A slightly hypertonic solution, containing carboxymethyl cellulose, saccharose, magnesium sulfate and relatively small amounts of sodium chloride, was used as irrigating fluid. A woman aged 43 with Hodgkin's disease, renal amyloidosis and blood urea of 415 mg. per 100 cc. was treated by intestinal irrigation with the aid of the jejunal tube. Thirty-three Gm. of urea were removed, and the blood urea was reduced to 310 mg., but improvement was only temporary. The patient died, and necropsy revealed nearly complete destruction of the glomeruli by the amyloid process. Two men, one with subacute nephritis and blood urea of 300 mg. per 100 cc., and the other with anuria after nephrectomy for renal lithiasis, were treated by intestinal irrigation with the aid of the isolated, exteriorized intestinal loop. Ten to 23 Gm. of urea were removed daily by irrigation in the first case. Within five days the blood urea was reduced from 425 mg. to 365 mg. per 100 cc. But insufficient vascularization of the intestinal loop caused necrosis of the mucosa and fatal peritonitis, with death occurring 20 days after irrigation was started. In the second patient nitrogen equilibrium was maintained for 46 days by intestinal irrigation combined with feeding by stomach tube, but death eventually occurred from cerebral embolism. These unsatisfactory results in patients with severe uremia should not discourage therapeutic trials of the method in patients with temporary disturbance of renal function. The indications for intestinal irrigation by tube are the same as for artificial kidney or peritoneal dialysis. Pulmonary edema is a contraindication. Intestinal irrigation cannot be substituted for exchange transfusion in patients with pronounced hemolysis, but it has the advantage of being applicable to patients irrespective of their blood groups. Compared with the artificial kidney, intestinal lavage has the advantage that it does not require the loss of an artery and a vein and that heparinization is not necessary. Its technic is more simple than that of peritoneal dialysis. The technic of the exteriorized loop should be reserved for patients with chronic nephritis. The method of intestinal irrigation is still in the experimental stage.

Ztschr. f. Hygiene & Infektionskrankr., Heidelberg

131:443-554 (No. 5) 1950. **Partial Index**

Occupational Anthrax: Danger of Anthrax in Handling of Imported Sheepskins and Goatskins. E. Hailer and K. Heicken.—p. 443.
*Bacterial Contaminants in Calf Lymph: Efforts to Eliminate Them with a Sulfonamide Preparation, Penicillin or Streptomycin. A. Herrlich and M. Bedrara.—p. 460.
Depth (Submerged) Culture of Tubercle Bacilli: Diagnostic Importance. A. Meyn.—p. 472.
Comparison of Dysentery Type F of the German Nomenclature with American and British Shigella Strains. H. Seeliger.—p. 509.

Elimination of Bacteria from Calf Lymph.—In the preparation of smallpox vaccine many methods have been used to eliminate bacterial contaminants from the calf lymph. Commonly, glycerin or various disinfectants are added, but most of these substances also modify the vaccine virus, if they act for a long time. More recently, physical methods have been used (e. g., ultraviolet and roentgen rays and ultrasonics) as well as penicillin and sulfonamides. The authors describe their own observations on the use of penicillin, streptomycin and a sulfonamide preparation. They found that these substances weaken the virulence of the vaccine much less than did the disinfectants used formerly. Tests on rabbits and on man showed that after these substances had acted on the vaccine for three months, its virulence was practically unchanged and the titer generally was 1: 100,000. The vaccine that had been treated with penicillin or with the sulfonamide preparation produced a somewhat attenuated effect in children, but the streptomycin-treated vaccine showed no reduction in potency. Streptomycin rapidly and effectively destroys the bacterial contaminants in smallpox vaccine lymph and makes production of a sterile vaccine possible within a few days.

BOOK REVIEWS

Peptic Ulcer. By A. C. Ivy, Ph.D., M.D., D.Sc., Vice President of University of Illinois in Charge of Chicago Professional Colleges, Chicago, M. I. Grossman, Ph.D., M.D., Associate Professor of Physiology in Department of Clinical Science, University of Illinois College of Medicine, Chicago, and William H. Bachrach, Ph.D., M.D., Research Associate in Physiology, University of Southern California School of Medicine, Los Angeles. Cloth. $14. Pp. 1144, with 137 illustrations. The Blakiston Company (Division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1950.

The objective of this book, as indicated in the preface, is the systematic integration of all important information concerning peptic ulcer. This formidable task has been accomplished with noteworthy success. The authors have made many original contributions to our knowledge of experimental peptic ulcer; this extensive experience is reflected in the comprehensive and lucid discussion of the many facets of the ulcer problem and the elimination of useless and unconfirmed data. The text is arranged in four parts. Part 1, introduction to the problem of peptic ulcer, deals with terminology, the mechanism of gastric secretion, the resistance of the stomach to digestion and the rate of healing of acute and chronic ulceration of the stomach and duodenum. Part 2, on the pathogenesis of peptic ulcer, is concerned with the histophysiology of the acute ulcerative process, the role of gastric and duodenal secretions, the relation of nicotine, alcohol and caffeine to peptic ulcer, intestinal and urinary extracts, the role of the nervous system, postmortem incidence and anatomic evidence bearing on pathogenesis, clinical and constitutional aspects and pathological physiology. The chapter on the experimental production of peptic ulcer is based on 447 references and is an exceptionally clear and compact presentation of the problem. Part 3, the diagnostic problem, reviews the clinical manifestations of esophageal, gastric, duodenal and anastomotic ulcer, the pertinent laboratory data, differential diagnosis and the recognition of complications. Part 4, the treatment of peptic ulcer, deals with the medical, radiological and surgical treatments of the disease, their rationale and indication. In this section, the conservative attitude of the authors is to be commended. Antacid therapy is reviewed comprehensively yet concisely. Surgical treatment is evaluated on the basis of an analysis of 422 references.

Each chapter is concluded with a summary and bibliography. The style is simple and lucid. Numerous tables summarize the extensive literature and add greatly to the clarity of presentation. The illustrations are well chosen; the addition of roentgenologic and possibly gastroscopic views of peptic ulcer might be desirable for completeness. The format and composition of the text are excellent. This book is highly recommended to all physicians and medical students. It will be of particular value to internists and surgeons dealing with peptic ulcer. It is an indispensable source of reference and a guide for the research worker and clinical investigator engaged in the study of this disease.

Elements of Human Physiology. By Miriam Scott Lucas, B.S., Ph.D., Assistant Professor, Department of Biological Science, Michigan State College. Second edition. Cloth. $4.75. Pp. 357, with 158 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1950.

This attractively printed and well illustrated textbook is intended for college courses in physiology for preprofessional and professional students. As a whole, the book is excellent; the style is animated, and the treatment of most divisions of the subject is well balanced.

The comments that follow are not so much a criticism of this book in particular as of contemporary textbook writing in general. "Proliferated" is used as a synonym for "elaborated" (page 326), "stimuli" for "nerve impulses" (page 233), "micturition" for "urination" (page 261) and "eunuchoidism" for "eunuchism" (page 328). One need not be an expert in semantics to perceive that, if the tendency thus exemplified continues to the point where every word has two meanings and every meaning two words, communication between teacher and student will be difficult. On page 109 is exemplified the present attitude of helplessness toward defects of color vision; instead of emphasizing the contrasts that can be appreciated by the greatest number of people, one makes sure that everyone with a demonstrable peculiarity is "eliminated by various tests." To those who took pleasure in this process of elimination, the Japanese and German color charts that were popular circa 1926 must have been particularly welcome, but nobody will ever know how much manpower was lost to the armed forces of the United States in World War II because of mistaken reliance on these ill conceived tests. On page 322 is exemplified the tradition that every textbook of physiology, though it ought to deal with the normal, must contain pictures showing cretinism and myxedema, while photographs of normal subjects must be used with discretion. The unwary student reading page 325 may be misled into supposing that there exists but a single islet of Langerhans. If he uses the left eye in looking at the diagram on page 103 ("one eye closed"), he will not observe the blind spot. The "definitely accurate" statements regarding the thymus and pineal (page 328) are questionable, and the statement that the "clinical value of testicular hormone is still questionable" is wrong.

These comments are made because the writing of elementary textbooks is a difficult art that is little appreciated. The polishing whereby a textbook matures until a student can memorize any given sentence of it, confident that it is "definitely accurate," calls for time and patience. It is hoped that future editions of the present commendable work will give the author opportunities to perfect it.

Differential Diagnosis of Internal Diseases: Clinical Analysis and Synthesis of Symptoms and Signs. By Julius Bauer, M.D., F.A.C.P., Clinical Professor of Medicine, College of Medical Evangelists, Los Angeles. Cloth. $12. Pp. 866, with 56 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1950.

This book gives a learned and comprehensive presentation of a great number of medical diseases. The author's contributions in the fields of constitutional disease and endocrinology and his teaching ability are well known. According to the publisher's note, Dr. Bauer's approach to the subject is original and is characterized by personal color and flavor, which is indeed true. The book does not describe quick ways of differentiating one disease from another, not even in the chapter summaries. The stated aim of the book is not to encourage memorizing by means of schematic tables but to train and stimulate medical thinking and judgment. It is admitted that there is some repetitious discussion and that the references cited at the end of each chapter were not selected impartially. The book is divided into two parts: (1) leading symptoms and (2) leading signs. Under symptoms there are discussions of broad subjects, such as headache, chest pain, abdominal pain, backache, cough, diarrhea, paralysis and hemorrhages. Under signs are discussed general appearance and fever, together with infectious diseases and systemic diseases grouped as respiratory, cardiovascular, digestive and other. A few illustrations of unusual endocrinologic and constitutional disorders, a few roentgenograms and schematic diagrams are included. There are comprehensive author and subject indexes.

Much emphasis is given to the psychoneurotic aspect of disease. The diagnosis in 32.3 per cent of the author's last 2,000 patients was "pure neurosis or psychoneurosis." He is opposed to the overmechanization of diagnosis and believes that differential diagnosis requires thoroughness in observation and examination of the patient, knowledge, experience and shrewdness. The book contains much more than differential diagnosis. Because of the author's erudition, he apparently finds it difficult to restrict himself to the titular limitation of the book and often digresses into the fields of therapeusis, pathological physiology, clinical pathology and elementary physical diag-

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nosis. The section on infectious diseases consists chiefly of thumbnail sketches of various entities. Many points are illustrated by case reports, which occasionally occupy a half to a whole page of fine print.

The author employs many eponyms better known to European than to American physicians, for example, Hippel's and Lindau's diseases, Thibierge-Weissenbach syndrome and Eisenmenger's complex. Other unusual terms are used profusely, such as dyspragia intermittens angiosclerotica intestinalis, myogelosis, uropoietic and Froin's, Abadie's and Jelinek's signs. The correctness of some passages is questionable, for example, the stated beneficial influence of iron therapy alone on menstrual disorders (page 714); precipitated phosphates in the urine suggest a neurotic background (page 36), and high grade hyperthermia is a regular sign in acute adrenal insufficiency (page 463). The following misstatements were detected: There is no isolated feature of influenza by which diagnosis can be made (page 486); sweat is more odorous in brucellosis than it is in any other infectious disease (page 474). Also, the leishmania which the author mentions on page 499 are hemoflagellates but are not species of the genus Trypanosoma. With respect to the discussion on chronic cyanosis (page 448) one wonders whether the author has confused the proprietary drugs alka-seltzer® and bromo-seltzer.® Presumably these errors will be corrected in subsequent editions; they are minor ones and do not detract from the value of the book, which can be used with interest and profit by advanced students of medicine.

Front Line Surgeons: A History of the Third Auxiliary Surgical Group. By Clifford L. Graves, M.D. Leather. $20. Pp. 350, with illustrations. Frye & Smith, Ltd., 850 Third Ave., San Diego 1, 1950.

Few of the unit histories of World War II evidence the thoughtful and painstaking preparations that have obviously gone into the history of this group. Well documented by maps, it shows an awareness of the part played by this unit in the over-all strategic picture that is rare in histories of this type. It is also an extremely valuable study of the evolution of the purpose and functions of the auxiliary surgical teams and of the field hospitals that played such valuable supporting roles in the European theater of operation. Half of this group was sent from England to Africa, where it participated in the African and Sicilian campaigns before rejoining the remainder of the unit in England. It was here, in Africa, that the full usefulness of the mobile surgical teams was first demonstrated. Members of the Third Auxiliary Surgical Group landed on the beaches and parachuted into Normandy in June 1944. After accompanying various Army units across France, many of them were captured during the Battle of the Bulge. Their experiences, carefully documented and explained as a part of the over-all picture, are a fascinating account of those difficult days as well as an extremely valuable description of the part played by various division, corps and Army medical units during this time.

A History of Philosophical Systems. Edited by Vergilius Ferm, Compton Professor and Head of Department of Philosophy in College of Wooster, Wooster, Ohio. Cloth. $6. Pp. 642. Philosophical Library, Inc., 15 E. 40th St., New York 16, 1950.

The volume, the editor of which was assisted by 41 eminent professors of philosophy, attempts to trace the history of main patterns of thought. The wisdom of attempting to accomplish a task of such dimensions in a volume of 600 pages is somewhat questionable. For the reader who has had no previous study of philosophy the volume, because of its compactness and mass of ideas and information, would be confusing. For graduate students in philosophy the volume would probably not offer any new information but might act as a review of historical material. To deal with the life and philosophy of Plotinus in four pages, Kant's critical philosophy in eight pages and Nietzsche in four pages and to attempt an exposition of the philosophy of dialectical materialism in a few pages constitute a difficult and probably not a satisfactory task. However, the information given is authoritative and makes interesting reading.

Comparative Animal Physiology. C. Ladd Prosser, Editor. By David W. Bishop, Professor of Physiology, University of Massachusetts, Amherst, and others. Cloth. $12.50. Pp. 888, with 312 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1950.

This is the first advanced textbook on comparative physiology to appear in English. The enormous amount of material is divided into 23 chapters, of which 13 were written by the editor. Physiological as well as biochemical aspects of comparative physiology are treated in a clear and competent manner. A wealth of data is incorporated in numerous tables, while diagrams and graphs illustrate important experimental material. Each chapter is provided with a carefully selected but large bibliography Although the aims of mammalian and comparative physiology are somewhat different, the book is highly recommended to anyone who wants to study physiological problems from a broad point of view. For the nonzoological reader a table and figures giving brief anatomic information about the chief species used in the work and the suitability of various species for specific problems would be desirable.

Aids to Medical Treatment. By T. H. Crozier, B.Sc., M.D., D.P.H., Assistant Physician, Royal Victoria Hospital, Belfast, and five contributors. Second edition. Cloth. $2.25. Pp. 439. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; Baillière, Tindall and Cox, 7-8 Henrietta St., London, W.C.2, 1950.

Aids to Surgical Anatomy. By J. S. Baxter, M.D., M.Sc., F.R.C.S.I. Third edition. Cloth. $1.75. Pp. 203, with 30 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; Baillière, Tindall & Cox, 7-8 Henrietta St., London, W.C.2, 1950.

Aids to Materia Medica. By George H. Newns, M.D., M.R.C.P., Physician to Hospital for Sick Children, Great Ormond St., London. Fourth edition. Cloth. $2. Pp. 204. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; Baillière, Tindall and Cox, 7-8, Henrietta St., London, W.C.2, 1950.

Aids to Histology. By Geoffrey H. Bourne, D.Phil., D.Sc. Fifth edition. Cloth. $1.75. Pp. 158, with 59 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves, Baltimore 2; Baillière, Tindall & Cox, 7-8 Henrietta St., London, W.C.2, 1950.

The "Students Aids Series" has long been popular with medical students. At the same time it has provoked considerable criticism from teachers who believe that such small books are not particularly useful, because of their brevity. Despite the difference of opinion concerning the place of these books, students will continue to use such volumes for quick reference and review.

Principles of General Psychopathology: An Interpretation of the Theoretical Foundations of Psychopathological Concepts. By Siegfried Fischer, M.D., Clinical Instructor in Psychiatry, University of California, San Francisco. Cloth. $4.75. Pp. 327, with 3 illustrations. Philosophical Library, Inc., 15 E. 40th St., New York 16, 1950.

In the first section of this book Fischer attempts to differentiate the "elements" of thought, memory, attention and emotion and to trace them directly to the physiology of perception and to Husserl's concept of "directedness." Various abnormalities in these processes are then described and meticulously classified, with rather more attention to minute shadings of terminology than to explanations of cause or diagnostic significance. The same methods of exposition are used in succeeding chapters on volition, intelligence, fantasy and language functions, except that here the classifications are somewhat more arbitrary and the dogmatic distinctions even more questionable. In part 2 Fischer emphasizes the role that "comprehension" and empathy must play in the investigation of the dynamics of human behavior, but he apparently still regards schizophrenic and organic psychosis as beyond such understanding. Fischer here also reverts to a number of obscure distinctions, such as those among object-orientations (*Sachverhaltniss*) and "drive-objects," and repeats valid but outdated polemics against Freud; nevertheless, the clinical discussions in this section are relatively lucid and dynamically orientated. Unfortunately, the descriptions of psychiatric "symptom-complexes" and so-called "character-types" in parts 3 and 4 once again resemble the most stereotyped pages in Kraepelin, Kretschmer or Sheldon.

It is difficult to ascertain the audience to which this book is directed. It is too limited in scope for an undergraduate textbook, too familiar and obsolescent in content for the specialist

and yet too technical and dry to interest the laity. Perhaps, as may be the case with many recent publications in this field, the book was written as a verbal release of repetitive introspections that the psychiatrist, unlike the patient, must keep repressed during his working day.

Urgent Diagnosis without Laboratory Aid: A Discussion of the External Signs of Conditions which Threaten Life. By Prof. Dr. Hanns L. Baur, a.o. Professor of Internal Medicine, University of Munich, Munich. Publication number 66, American Lecture Series, monograph in American Lectures in Medicine. Cloth. $2. Pp. 89. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; The Ryerson Press, 299 Queen St., W., Toronto 2B, 1950.

There are claims today that laboratory diagnosis constitutes the basis of the practice of medicine and that without it medical and surgical diagnosis is largely guess work. Such a claim should not be accepted as truly representative. Unquestionably, laboratory diagnosis has crept more and more into medical practice, but, as long as it is not abused, it offers an additional helpful and at times truly lifesaving aid to the diagnostician, therapeutist, surgeon and other practitioner. On the other hand, the student and younger practitioner may not have the grounding in diagnosis that was necessary years ago, when laboratory procedures were comparatively little known. In addition, there are times when laboratory aid is not at the physician's disposal and he must depend on his training, experience, senses and even intuition to carry him to the solution of some diagnostic problem. Thus the importance of differential diagnosis cannot be too strongly emphasized.

In this small volume much useful information is interestingly presented with a minimum of wasted words. Thus the reader may find diagnostic hints in seven chapters which embrace such topics as unconsciousness and psychoses, convulsions and other nervous manifestations; the appearance of the patient's facies, his position and attitude and their relation to disease; abnormal odors; cutaneous manifestations; disorders of respiration; urinary symptoms, and gastrointestinal manifestations. The book is easily read and is a helpful addition to the practitioner's library. There will be many occasions during normal practice when the helpfulness of this book can be demonstrated.

Life Among the Doctors. By Paul de Kruif. In collaboration with Rhea de Kruif. Cloth. $4.75. Pp. 470. Harcourt, Brace and Company, Inc., 383 Madison Ave., New York 17, 1949.

Paul de Kruif is well known for his writing on medical subjects. While he has both supporters and critics because of the enthusiasm that is apparent in most of his writing, few will deny that the story he is telling is interesting. In his book "Life Among the Doctors" de Kruif tells how he feels about certain well known figures in medicine. The first person singular and first person plural are both used in the narration, because of the joint participation by Paul de Kruif and his wife, Rhea.

This book may be regarded in part as an autobiography, because it reflects, deliberately or otherwise, some of the experiences of the authors with medical men. At times it seems to hint of the personal philosophy of one or both of the authors. There are signs of deep admiration for the medical profession and particularly for some of the men whom they praise. On the other hand, criticism here and there is evident. Among the figures in the book are Clifford C. Young, Tom Douglas Spies, Herman N. Bundesen, Alvin F. Coburn, Leo Loewe, O. C. Wenger, Georgia Hauke, Herman Kabat and Sidney Garfield.

Some readers no doubt will question some of de Kruif's enthusiastic support, but there are probably few works by this writer which have not evoked some criticism. If personal bias can be turned aside, the reader will enjoy most of the passages in this book, though he may not agree with all the interpretations. One cannot but wonder, however, whether de Kruif will have the same enthusiasm about all the persons and situations mentioned in the book, say, a few years hence. The book can be recommended for an interesting few hours, for some revealing, intimate glances into the lives of a number of persons.

Public Health Nursing Practice. By Ruth B. Freeman, R.N., B.S., M.A., Administrator, Nursing Services, American National Red Cross, Washington, D. C. Cloth. $3.50. Pp. 337. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1950.

In this volume, the author aims to correlate the purpose, technic and content of public health nursing as they are related to the social, economic and technical forces in our present social structure. The methods and procedures proposed are intended for application in any field of nursing in which there is a public health component—in government or voluntary public health agencies, in industry or in private practice nursing. Such topics as current trends, background, basic assumptions and scope of public health nursing are considered. The interrelated responsibilities and problems associated with family health care are submitted to detailed study. Methods for conducting classes and discussion groups, the use of records and reports and criteria for the physical layout of the nursing office are reviewed. This book very adequately fulfils its purpose in providing a general textbook on public health nursing to meet the needs of graduate and undergraduate university students. Furthermore, it is a valuable reference source for health officers, social workers and all other groups who work with public health nurses.

The Biochemistry of B Vitamins. By Roger J. Williams, Robert E. Eakin, Ernest Beerstecher, Jr., and William Shive. Cloth. $10. Pp. 741, with illustrations. Reinhold Publishing Corporation, 330 W. 42nd St., New York 18, 1950.

The one hundred tenth volume of the monograph series edited under the auspices of the American Chemical Society is an extensive and authoritative review of the B vitamins. The stated primary goal of the book was "to present the material in a readable form, intelligible to those whose activities may be along a wholly different line." This goal has been admirably achieved. The information is presented simply and completely without sacrifice of accuracy. This should not imply, however, that the book is for the layman.

The presentation is developed in four sections. Section A discusses the characterization, distribution, assay and biogenesis of B vitamins. Section B describes the catalytic functions of these vitamins. Section C discusses the role of the B vitamins in animal and plant organisms. This section should be of direct interest to all physicians, since it includes chapters on factors influencing B vitamin requirements, metabolism of B vitamins, physiological, pharmacologic and toxicological effects and B vitamin deficiency states. The final section concerns the comparative biologic activities of the B vitamins and related compounds and contains for each vitamin a thorough general and specific discussion of the concept of analogue metabolite inhibition, which has recently unlocked another door for important advances in the clarification of the role of vitamins in biochemical processes. The lists of references at the end of each chapter are recent and complete. The binding is excellent. This book is one of the best available on the B vitamins and is an excellent investment for the physician.

Arkansas Diet Manual. Prepared by Arkansas State Board of Health and Arkansas Dietetic Association. Edited by Geraldine Waggener, Dietitian Consultant, Arkansas State Board of Health,, Little Rock. Endorsed by: Arkansas Hospital Association, Arkansas Medical Society, Arkansas State Nurses Association, University of Arkansas School of Medicine. Boards. Pp. 99, with illustrations. Little Rock, 1950.

This little book may be useful to physicians and dietitians. A special feature is the duplication of the various diet orders in a form suitable for distribution to patients, and additional diet order blanks can be obtained by physicians from the publisher. It is less technical in content than some other manuals; however, the plan for presenting diets is good in that this is easily interpreted. The principal medical and surgical conditions requiring special diets are included. A weakness may be in the failure to relate the nutritional value of each diet with the recommended daily allowances of the National Research Council. The editor-author emphasizes that these diets are intended as general guides rather than absolute rules and that individual differences and needs will indicate necessary deviation.

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QUERIES AND MINOR NOTES

SUBSTANCES THAT PASS INTO BREAST MILK

To the Editor:—*1. What substance (drugs, foods) pass into breast milk? 2. What drugs definitely pass the placental barrier?* *M.D., New York.*

Answer.—1. Many substances ingested by the mother may appear in the breast milk. Opiates, atropine, salicylates, iodides, bromides, quinine, lead and mercury pass into the milk. If large quantities of alcohol are consumed by the mother, it is secreted in the milk. The various foodstuffs may alter the quantity and composition of breast milk. 2. As a rule substances of a molecular weight under 1,000 appear to pass the placental barrier readily. Thus, almost all drugs get into the fetal circulation readily. This is true of the narcotics, sedatives, antibiotics and a host of other substances.

DIGITAL EXPLORATION OF FEMALE URETHRA

To the Editor:—*As an old-fashioned urologist, I have resorted several times to dilation of the female urethra and subsequent digital exploration, in order to explore the bladder neck, remove a foreign body and such. The method has given complete satisfaction in appropriate cases, and I have never had any trouble with proper after-care. However, I have been told that such procedures are to be condemned. I would appreciate your opinion.*

Eugenio Franchesi, M.D., Texarkana, Ark.

Answer.—The female urethra may permit wide dilation without resultant permanent injury. However, if there are cicatricial changes in the urethra, introduction of the finger would be difficult and resulting trauma could be followed by serious infection. Although digital exploration of the bladder might give some data as to the existence of a stone, foreign body or a large neoplasm, it is a crude and unscientific method of diagnosis. It would be easy to overlook a flat bladder tumor or a small soft papilloma as well as a diverticulum. Digital examination would fail to determine the presence of inflammation, ulceration or lesions involving ureteral orifices. The cystoscope offers such a superior method of diagnosis that digital exploration could hardly be recommended to the modern physician.

SALT SUBSTITUTES

To the Editor:—*Are the salt substitutes now on the market harmless? Does sodium retain fluids in the body, and does potassium help to bring about the elimination of fluid? Is a high level of blood urea a contraindication to a salt-free diet?* *J. D. Riley, M.D., State Sanatorium, Ark.*

Answer.—Salt substitutes now marketed employ potassium and ammonium salts alone or in various combinations to impart a salty flavor to food. Ordinarily, even in rather large doses, these salts are so rapidly excreted by the normal kidney that their concentration in the interstitial and intravascular compartments does not rise. However, they are generally used in combination with a low sodium intake and become potentially harmful by contributing to electrolyte imbalance. This is especially true in the presence of congestive circulatory disease with functional renal impairment and in organic kidney diseases. In these conditions, a reduction of sodium ion further depresses an already underfunctioning kidney causing oliguria and rise in the nonprotein nitrogen content of the blood. Ammonium ion, because it is a weak base in comparison to sodium, would contribute to the development of acidosis. If potassium has been substituted, the existing depression of renal function with consequent low concentrating power may permit dangerous levels of potassium to accumulate in the interstitial and intravascular compartments. Such high levels of potassium may depress and paralyze the heart, apparently by direct action on cardiac muscle.

For each 6 or 7 Gm. of sodium chloride, 1,000 cc. of fluid is retained in the body. Potassium ion is diuretic because it increases the urinary excretion of sodium as well as potassium with consequent loss of body fluid.

A high level of blood urea would be indicative of renal impairment of considerable degree. Van Slyke has estimated that less than 25 to 40 per cent of renal function remains before nonprotein nitrogen content of the blood begins to rise. Therefore, low salt regimens must be used with extreme caution, if at all in such cases, since sodium chloride restriction has been demonstrated to affect adversely the glomerular filtration rate and renal blood flow. These factors would contribute to further depression of renal function, development of oliguria and increase in nonprotein nitrogen levels.

ATTACKS OF DIFFUSE ABDOMINAL PAIN AND DIARRHEA

To the Editor:—*A white man, aged 38, has been having diffuse abdominal pain about once a week for two years. The pain is usually in the entire lower part of the abdomen but sometimes is over the entire belly, never localized. The episodes come on several hours after eating and have never been accompanied by nausea or vomiting but are frequently accompanied by diarrhea. About 30 to 60 minutes after onset of severe agonizing pain the patient has two or three loose bowel movements, after which the pain is less severe but may persist for several hours, sometimes lasting all night. The patient never has fever. He is unable to wear a belt, because anything tight around the abdomen aggravates the pain. There has never been any occult blood in the stools. An appendectomy was done four months ago, but the episodes have continued the same as prior to surgery. There has been no weight loss. The patient feels well between attacks. He has a small left inguinal hernia, which does not descend into the scrotum. During the episodes of pain this hernia does not become firm, swollen or tender. Abdominal distention during an "attack" is either mild in degree or absent. There are no localized tender spots on the abdomen during an attack. Peristalsis is hyperactive and borborygmi are audible throughout the belly. An upper gastrointestinal series failed to reveal evidence of a gastric or duodenal ulcer. The patient states that if he adheres for several days to a milk and water diet he does not experience any abdominal pain or diarrhea. The lungs, heart, blood pressure, urine and blood cell counts are within normal limits. Is there a possibility that the hernia could be productive of these episodes? What is the differential diagnosis, and what further studies are indicated?*

M.D., California.

Answer.—The bizarre picture presented suggests a disturbed motility of the small intestine. Therefore, it seems that the first diagnostic approach would have to do with motility studies of the small bowel by means of fluoroscopic and roentgenologic control. It is important to note the transit time of the small intestine and the time when the barium enters the colon. In addition, one should perform agglutination tests with the various organisms for bacillary dysentery; smears and cultures of the stools for parasites and pathogenic bacteria; a careful study of the stools for undigested food, particularly fats and carbohydrates, and a proctoscopic examination to note deviations from normal in the mucous membrane of the rectum and sigmoid.

One might suspect, at the outset, an organic disturbance in the gastrointestinal tract. However, with the absence of weight loss over a long period of time, one can be rather

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certain that organic disease is not present. This problem apparently is centered in a disturbance of the autonomic nervous system, particularly that affecting the small intestine. These attacks may be associated with late postprandial hypoglycemia. If there is anything to suggest hypoglycemic manifestations, an intravenous glucose tolerance test could be done to determine whether the patient has a significant lowering of the blood sugar level at the end of three hours. If this clinical picture proves to be one of a psychogenic manifestation, the patient should be put on a diet that has been suggested as best for small bowel hypermotility. Atropine and phenobarbital, three times a day at meals and at bedtime, could be given in sufficient doses to control the clinical symptoms. Any other medication can be given as deemed necessary purely on a symptomatic basis.

ANTISEPTIC QUALITIES OF PURE ISOPROPYL ALCOHOL

To the Editor:—*I am using ophthalmic applicators in beta radiation therapy, one of which has a thin aluminum treatment surface and the other a thin magnesium treatment surface. It is necessary that the surface of the applicator be sterilized before it is placed in contact with the cornea, but at the same time it is necessary that an antiseptic that will not corrode the surface of the instruments be used. Many of the common antiseptics will slowly corrode these metal surfaces, especially the one made of magnesium. It has been suggested that probably one of the best sterilizing mediums is pure isopropyl alcohol, and I have been advised that the water in many of the antiseptics may be a corrosive factor. I would appreciate your sending me what information you can concerning the antiseptic qualities of pure isopropyl alcohol. If you have any other suggestions in regard to this matter, they will be greatly appreciated.*

Harold Swanberg, M.D., Quincy, Ill.

Answer.—Isopropyl alcohol possesses antibacterial properties comparable to ethyl alcohol; neither is effective against spores. The scant literature on isopropyl alcohol is controversial regarding the most effective concentration for disinfecting surfaces. Under most conditions, it is generally agreed to be most active in the 98 to 99 per cent pure state. Since it is more toxic than ethyl alcohol and will coagulate tissue, application of isopropyl alcohol to open wounds should be avoided. Chemical agents, including the alcohols, cannot provide surgically sterile instruments and should not be substituted for heat sterilization when the latter is practicable.

BLOW ON ABDOMEN AND CANCER OF PANCREAS

To the Editor:—*A 58 year old man fell in May 1948, while working on board ship, and sustained, among other injuries, a blow on the abdomen. He continued to complain of pain in the abdomen while being treated, but apparently nothing was done about it. Prior to his injuries his health was good. In February 1949 a gastrointestinal examination revealed a tumor mass in the region of the head of the pancreas and the duodenum. In April 1949 he was admitted for a laparotomy. A large soft mass, hemorrhagic and cystic in appearance, was removed from the head of the pancreas; it had obstructed the common bile duct and caused cystic enlargement of the gallbladder. The pathological diagnosis was anaplastic carcinoma of the pancreas. Should one assume that the abdominal injury caused the onset of this cancer? If one assumes that the cancer existed silently before the accident, can one conclude that the accident accelerated the growth and therefore hastened this man's death?*

Peter J. Milazzo, M.D., Corona, L. I., N. Y.

Answer.—There is no infallible experimental, clinical or pathological evidence to support an assumption that a blow on the abdomen could induce a cancer in the head of the pancreas or accelerate its growth if it existed in the head of the pancreas at the time of the accident, thereby hastening the patient's death.

MONTHLY REPORT OF SPECIMENS

To the Editor:—*Kindly answer the following questions in regard to our tissue department's monthly report: 1. In counting gross specimens, would the organs removed by hysterectomy with bilateral salpingo-oophorectomy be considered as one specimen? 2. Concerning microscopic work, would the slides made from autopsies be counted in this group? 3. When appendectomy is incidental to cholecystectomy, would the appendix be counted as a normal specimen? 4. Our pathology department examines all surgical specimens from two other hospitals and performs all autopsies for one of them. Should we give credit for these to our pathology department?*

Marie Valdes-Dapena, M.D., Darby, Pa.

Answer.—1. It is usual practice in many hospitals to consider a hysterectomy specimen as one specimen, regardless of whether it includes the tubes and ovaries, so in your case a hysterectomy with bilateral salpingo-oophorectomy would be considered as one specimen. 2. Slides made from autopsies are usually counted in a monthly report. 3. The appendix should be considered as a normal specimen. 4. The pathology department should receive credit for the surgical specimens and autopsies performed, even though they were done outside your own hospital. However, in computation of the autopsy percentage for your hospital, these should naturally not be taken into consideration.

GENETIC MECHANISM OF TWINNING

To the Editor:—*What is known about the exact genetic mechanism of fraternal and identical twins? How could a hereditary influence on twinning through the father be explained? Is it true that the production of monozygotic twins is not believed to depend on a hereditary factor?*

Leo J. Selwyn, M.D., Los Angeles.

Answer.—Explanation of the genetic mechanism of twinning is still speculative. Careful studies indicate that there is no inherited tendency to produce monozygotic or identical twins. Students of experimental embryology have found it easy to produce one egg twins by treating the fertilized egg cell in various ways, after it has divided once. Sea urchin eggs may be placed in calcium-free sea water, for instance; the cell surfaces will be so changed at the region of their contact that the two cells will separate and develop independently. The cells may also be pulled apart by a fine glass needle or a loop of hair. Presumably, their separation in the fallopian tube is the result of some such accident. Two-egg twins run in families; they are also produced more frequently in some of the taller races of mankind and in the later childbearing years of a mother. No one has explained satisfactorily why increased frequency of twinning should be found among the father's relatives more than among those of the mother. One hypothesis is that double ovulations are actually rather frequent and that the appearance of two-egg twins is favored by any inherited traits that will give both fertilized eggs an unusually good chance to survive. Such traits could come from the father as easily as from the mother.

STRABISMUS IN ONE OF IDENTICAL TWINS

To the Editor:—*We have under observation twin girls, 14 months old; they are identical as far as can be determined. There is, however, one outstanding difference between the two—one of them has pronounced internal strabismus. Why did this occur in only one of them? Neither has had any illness since birth. Their feeding, weight and growth are exactly the same.*

M. A. Shellington, M.D., Glendive, Mont.

Answer.—Identical twins are not absolutely identical in every respect, and the causes of strabismus are numerous, including anatomic defects, conditions affecting either muscles or nerves and emotional disturbance. An inherited tendency to strabismus is not always evident. In this case, the tendency may exist in the other twin but not be manifest.

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